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The Orchadian

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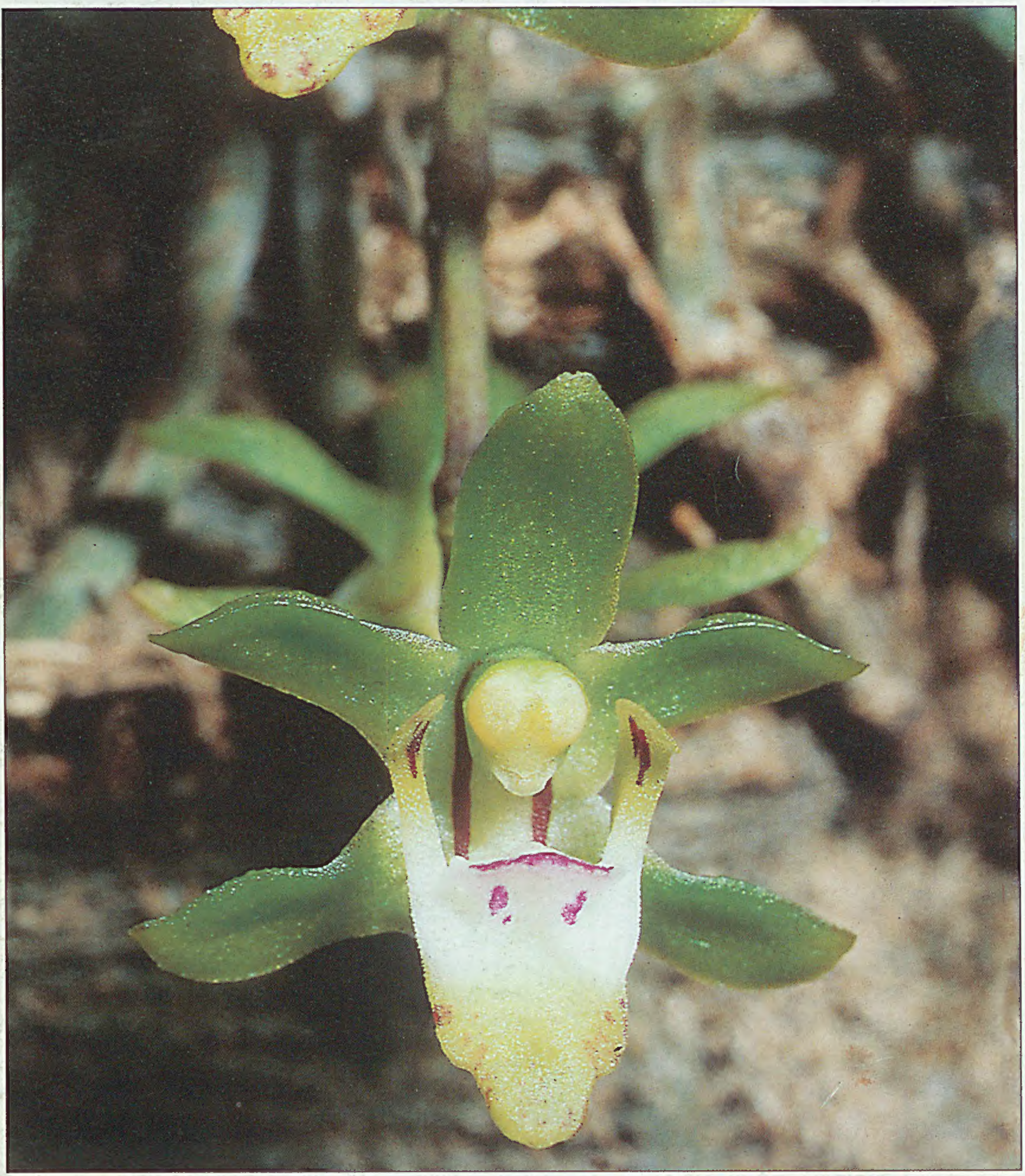
Special Conference Issue - Melbourne 2000



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Sarcochilus spathulatus

From the Editor...

The Fourth ANOS Conference and Show to be held in Melbourne is almost upon us. It should be a very exciting experience. Judging by the list of lecturers, there should be something of interest to all registrants – with almost all aspects of Australasian Orchids covered.

It is always a problem finding suitable material for the magazine, when it is essentially a specialist journal. There has been a feast of articles on terrestrials of late, which of course upsets the epiphyte (and hybrid) growers. I make no apologies for this, as I can only publish items that are sent to me. Why is it the people that chronically complain never contribute anything for publication? There's always a cry for articles on hybrids, the fact is someone has to write them!

The Australian epiphytic orchid flora is well documented, in books and periodicals. However our knowledge of the deciduous terrestrial orchids is far from complete. *The Orchadian* is the only periodical that has been keeping readers up to date with all the latest taxonomic changes relating to Australian orchids. Peter Eygelshoven discusses a rare controversial species, which was recently re-discovered in a couple of locations. Personally, I am always wary about divulging the location of many of these finds – after all, many know what happened to *Pterostylis hians* – now possibly extinct in the wild.

This issue features a major paper by Michael Harrison on the twig epiphyte, *Sarcochilus spathulatus*. Gerry Walsh is also back, this time discussing the *Dendrobium speciosum* complex as it occurs around the Tropic of Capricorn. We also showcase some of the delightful orchids of Victoria and Tasmania. Both of these states are hosting major conferences in October, with Burnie the venue for the Australian Orchid Conference. I look forward to meeting many of you at these important social events.

David P. Banks
Editor, *The Orchadian*
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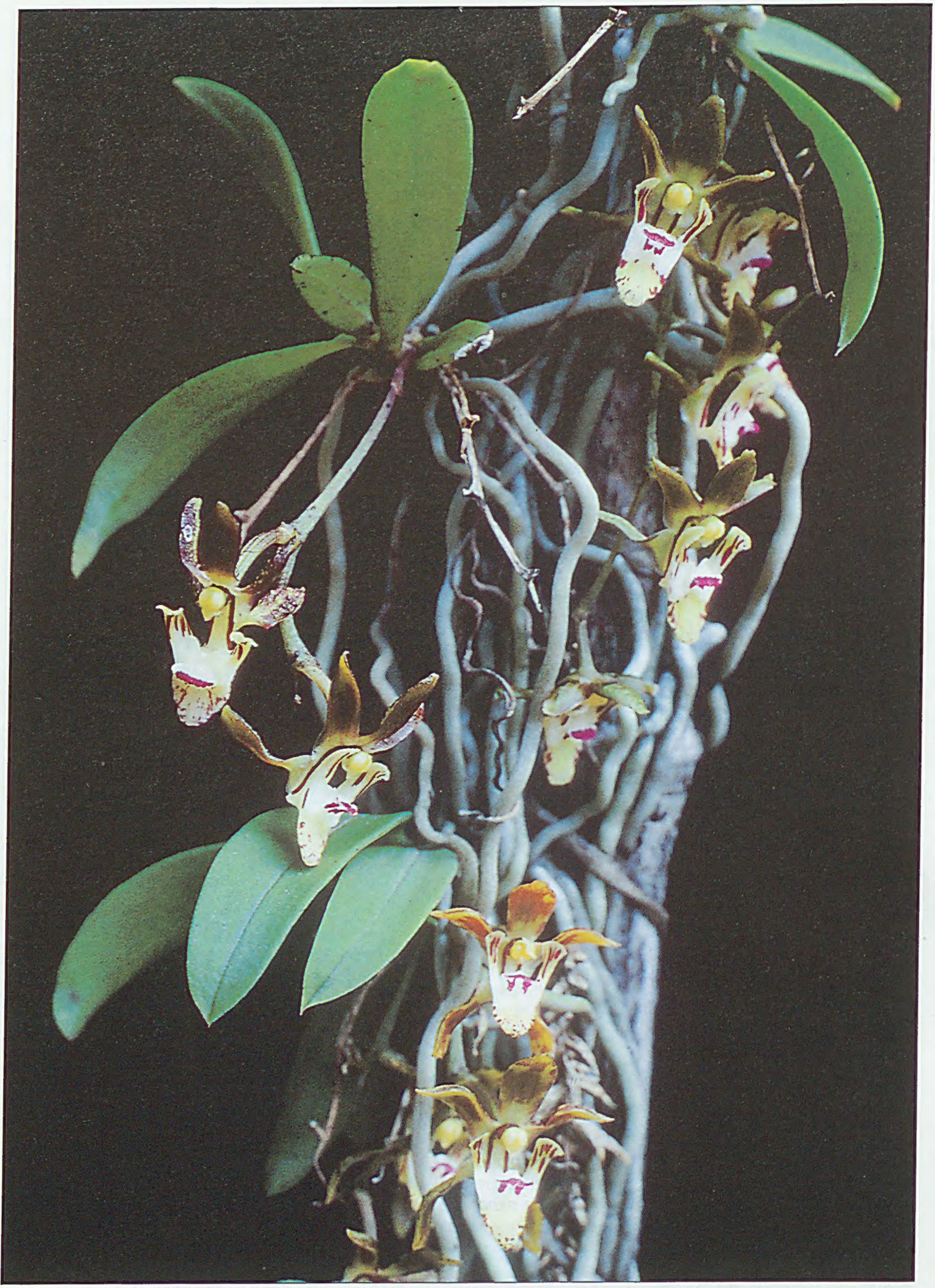

M. Harrison

Sarcochilus spathulatus

Group of plants from Dorrigo, New South Wales.

Sarcochilus spathulatus R.Rogers

Michael Harrison
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Notwithstanding its wide distribution and colony-forming tendencies, *Sarcochilus spathulatus* seems to have been an elusive species for many native orchid enthusiasts. The number of growers who profess to having never seen this orchid in the wild is considerable, although its smallish size and discreet habit make it easily overlooked.

Sarcochilus spathulatus is a temperate epiphytic species with a wide distribution in eastern Australia. At its southern limit it is known from the Watagan Mountains, between Sydney and Newcastle in New South Wales, and from here it extends northwards, along the eastern slopes and ranges of the Great Dividing Range into southern Queensland, where it reaches its northern limit of distribution around Kenilworth, an overall straight-line distance of approximately 750 kilometres. It is also known from the relatively isolated Bunya Mountains, northwest of Toowoomba.

S. spathulatus enjoys a more or less continuous distribution across its range, and in many places is locally common. It generally favours areas some distance inland from the coast and is usually seen at moderate altitudes between 300 and 700 metres. However, its altitudinal range extends up to at least 1100 metres. Well-known strongholds for this species include such areas as Barrington Tops, the Comboyne Plateau, the Hastings Range and the Dorrigo Plateau, all northeastern NSW locations, and the McPherson Ranges on the NSW/Queensland border.

S. spathulatus colonises rainforest trees, commonly growing as a twig epiphyte in the outer canopy in sub-tropical and warm temperate rainforest communities. It is, however, fairly adaptable (cosmopolitan) in its requirements, and may be encountered in a variety of situations and on a considerable number of different host species. Occasional plants are seen on the trunk or main laterals of the host tree. It also grows on lianas and vines, as well as on low growing rainforest understorey shrubs where adequate sub-canopy light is present. The lower limbs of the hoop pine (*Araucaria cunninghamii*) is a favoured situation, and where this tree is grown under plantation conditions in northern NSW and southern Queensland, *S. spathulatus* is often seen as a pioneer epiphyte.

It probably reaches its best development in marginal rainforest situations, or in areas that support somewhat drier rainforest associations, where the lower, more open canopy allows good light penetration but still provides adequate protection from low humidity and extremes of weather. In such places it may be seen growing down to just a metre or two above ground level. Relatively small patches of gallery forest often contain large colonies, and occasional trees on rainforest margins or in sheltered gullies may support dozens of plants, although they can be difficult to spot. Where *S. spathulatus* occurs in tall, closed forest, its presence in the canopy, 35 or 40 metres above the ground is practically impossible to determine, and only a fallen limb will reveal its proximity.

In common with a number of other twig epiphytes in subtribe Sarcanthinae, *S. spathulatus* usually aerialises some or many of its roots, primarily as a strategy to avoid or survive dislodgement from its host, an ever-present danger for epiphytic plants. Aerial roots are no different from the regular roots of the plant, apart from the fact that they are not attached to the host limb and simply extend out into mid-air. Sometimes these aerial roots grow together into a tangled mass.

All epiphytes live a fairly precarious existence, dependent as they are upon the health of their host and at the mercy of the elements, but twig epiphytes are especially vulnerable. They germinate and grow on the thinnest branches, sometimes even on dead-wood, and in such situations are particularly susceptible to wind damage, heavy rainfall, animal and bird activity, and falling limbs from higher in the canopy. It is not uncommon to see plants that have been detached from their host twigs, and are hanging on by just one or two roots.

By producing aerial roots, twig epiphytes give themselves a chance, and usually a good chance, of surviving dislodgement. At times, these aerial roots attach themselves elsewhere on the host, or even to the limbs of other trees, giving the plant separate points of attachment, and thus an increased level of security. And, even when aerial roots fail to find a direct foothold, by their nature they provide the plant with a larger potential capacity with which to snag an alternate host limb during freefall. Indeed, it is quite common to find a plant hanging by just one or two aerial roots, clearly having fallen from higher up, and often with a portion of the original host twig still in tow. As long as they remain suspended in mid-air, and do not fall to the forest floor, such plants will continue to thrive, and will usually re-attach themselves directly to their new host.

S. spathulatus is a typical, medium-sized temperate "sarcanth", with leaves up to 100 mm long, but more commonly 60-80 mm, and often with a scattering of fine purplish spots on the upper surface. Typically, a plant will carry just three or four leaves, as older leaves are progressively shed, but under ideal conditions a considerable number of older leaves will be retained, sometimes as many as 8 or 10. The hard, woody stem becomes more or less pendulous, and on an old plant may attain a length of 25 or 30 mm. A mature plant will usually produce two or three pendulous, 80 mm long inflorescences from flowering nodes on the stem, situated in the leaf axils, with each inflorescence carrying up to 10 flowers (two to five is the norm), which open progressively. The widely opening flowers are up to 15 mm tall and quite angular in shape, with tall, spoon-shaped labellum side-lobes, and a prominent, fleshy, forward-projecting spur, or chin, which is actually hollow. As in many "sarcanths", the labellum mid-lobe is rudimentary.

Flower colour is variable, ranging from bright apple-green, through olive and yellowish-green, khaki and tan, to chocolate brown. Often there is an almost enamelled finish, giving the face of the flower a shiny appearance. A prominent purple stripe adorns each side of the column foot, and the essentially white labellum usually carries a few purple markings, especially on the side-lobes. It is interesting to note that some years ago I raised a batch of *S. spathulatus* seedlings from a selfing of a plant with bark brown flowers in my collection. When they flowered all colour forms were more or less equally represented, presumably indicating that no particular colour is dominant.

Taxonomically, *S. spathulatus* has been the subject of considerable attention over the years. Originally described by Rogers in 1927, from material collected on Tambourine Mountain in southern Queensland, it was one of two species removed from *Sarcochilus* by Alick Dockrill in 1967 in his *Australian Sarcanthinae* and placed into a newly created genus, *Parasarcochilus*. A new species, *Parasarcochilus hirticalcar*, was also described at this time. Dockrill's reasoning for this move was that the three species in question, *S. hirticalcar*, *S. spathulatus* and *S. weinthalii*, were not eligible to be included within *Sarcochilus* because they lacked certain characters of floral morphology used to define that genus. In particular, these species were devoid of fleshy appendages, known as calli, on the inside of the labellum. He therefore created the new genus to accommodate these three species, naming it *Parasarcochilus* to indicate its close relationship to *Sarcochilus* (*para* = close to; beside). In *Australian Indigenous Orchids* (First Edition, 1969), Dockrill confirmed this treatment, listing these species under *Parasarcochilus*.

Then, in 1972, Leslie Garay, an American botanist, determined that both *S. hirticalcar* and *S. spathulatus* rightfully belonged in *Pteroceras*, a Southeast Asian genus (Garay, *Bot. Mus. Leafl. Harv. Univ.* 23(4):194(1972)). *S. weinthalii* did not fit *Pteroceras*, and was returned by Garay to *Sarcochilus*.

Writing in *The Orchadian* in 1983 (Weinthal's Sarcanth, 7(7):158), Alick Dockrill accepted Garay's transfer of *S. hirticalcar* and *S. spathulatus* to *Pteroceras*, but still maintained that *S. weinthalii* was ineligible for *Sarcochilus* and should remain in *Parasarcochilus*. By 1992, however, Dockrill had reconsidered, and in *Australian Indigenous Orchids* (2nd Edition, 1992) he retained all three species in *Parasarcochilus*. His decision to abandon *Pteroceras* was based on the comments of Mark Clements in *Australian Orchid Research* Vol.1, 1989 (A. Dockrill, pers com.).Clements, in his

Australian Orchid Research Vol. 1, 1989, listed all three species under *Sarcochilus*, and in collaboration with Ben Wallace, stated of *S. hirticalcar* and *S. spathulatus* that "these two species do not belong in *Pteroceras* since they lack some of the essential characters of plant habit, flower form and phenology found in this Malesian genus." Having dismissed *Pteroceras* as an appropriate genus, Clements and Wallace also decided against *Parasarcochilus*, expressing the opinion that *S. hirticalcar* and *S. spathulatus* are "equivalent to those in *Sarcochilus* except for some details of the labellum" and that "these differences probably reflect developments of tissue associated with an adaptation to a particular pollinator rather than representing a major genetic change". This approach was also adopted by Walter Upton (*Sarcochilus Orchids of Australia*, 1992), although apparently with some reservations. It would appear that *Sarcochilus* is the preferred genus, at least for the present.

Alick Dockrill clearly disagrees. Writing in *Australian Indigenous Orchids* (2nd Edition, 1992) he expresses surprise that in *Australian Orchid Research* Vol.1, 1989, these three species have been included in *Sarcochilus*, since they are "devoid of significant calli" within the labellum, one of the defining features of members of the genus *Sarcochilus*. He refutes the claims of Clements and Wallace (as stated in the paragraph above), saying, "the suggestion that this is from a reduction of tissue due to the stimulus of pollinators is an unverifiable presumption".

Various opinions and treatments are commonplace in taxonomy, and are generally a reflection of differing philosophies and interpretations. In a strict sense, Alick Dockrill is probably correct, in that *S. hirticalcar*, *S. spathulatus* and *S. weinthalii* do lack the full suite of diagnostic features used to define members of *Sarcochilus*. However, this may well be a case of the definition of the genus needing to be amended to make it more accommodating, rather than excluding from it, three species which should be reasonably included. It is a moot point, and further investigation will be required to determine the precise status of these three species in relation to the remainder of *Sarcochilus*. As Dockrill himself acknowledges in his introduction to subtribe Sarcanthinae (*Australian Indigenous Orchids* 2nd Ed. 1992 p. 871) "it is interesting to note that some of the criteria separating some of the genera in Sarcanthinae seem, superficially at least, to be of a rather trivial nature while rather major differences occur between some sections of *Dendrobium* yet these remain in the one genus". The challenge will be to apply the full range of diagnostic techniques and procedures, in addition to the analysis of floral morphology, in order to clarify the evolutionary links within this group of orchids.

The enigmatic *Sarcochilus harriganae*, described by H.M.R. Rupp in 1938, has been the topic of much conjecture over the years, but nowadays it is regarded as a synonym of *S. spathulatus*. Rupp described *S. harriganae* from plants he had been sent from the Dorrigo district; an area where *S. spathulatus* is common, and there is no doubt his description closely approximates *S. spathulatus*. Likewise, his illustration of *S. harriganae* resembles a small plant of *S. spathulatus*. However, Rupp was quite familiar with *S. spathulatus*, and it is hard to believe he would not have recognised these "new" plants as that species. Rupp even raised the possibility of *S. harrriganae* being a natural hybrid between *S. spathulatus* and *S. olivaceus*.

Unfortunately, the only material of *S. harriganae* consists of just two flowers preserved in spirit in the NSW Herbarium, too small a specimen to risk damaging, so we are left to ponder its real identity. At best, we can say it probably does represent *S. spathulatus*, but the existence of a similar but separate species, presumably very rare, cannot be completely excluded.

My earliest encounter with *S. spathulatus* came in 1971 on a trip to the upper Karuah River, which drains a southeastern portion of the Gloucester/Barrington Tops. This rugged, high rainfall massif separates the Hunter River and its tributaries from the southern tributaries of the Manning River, and comprises mainly state forest, water board catchment area and national park. The terrain is mostly lushly forested mountains, quite steep and inaccessible in parts, intersected by free-flowing rivers and streams, building in elevation to a large central plateau, and reaching a maximum altitude of 1556 metres at Mt. Barrington.

Along the river flats and in sheltered valleys, especially those with southern and eastern aspects, there are significant stands of sub-tropical rainforest, which extend up to 900 metres where conditions are favourable. This is tall, dense forest with a closed canopy and a multitude of tree species; epiphytes and lianas are common. As you climb, this gives way to warm temperate rainforest in places, dominated mainly by sassafras (*Doryphora sassafras*), and at higher altitudes, in protected positions below the southern and eastern rims of the plateau, mainly between 900 and 1300 metres, large stands of Antarctic Beech (*Nothofagus moorei*) dominate the cool temperate rainforest. In exposed areas on the very top of the central plateau, there is sub-alpine woodland, with sphagnum bogs, swamps and grassland.

On some of the steeper hillsides at moderate altitudes, where soils are poorer or in intermediate zones where rainforest merges with sclerophyll forest, a form of low scrubby rainforest exists. Common in these areas is the tree-heath, *Trochocarpa laurina*, a small to medium sized tree which is without doubt one of the most prolific epiphytic orchid hosts. Its furrowed, corky bark seems perfectly suited to as great many orchid species, and where conditions are ideal it is not uncommon to find trees that are practically covered in epiphytic orchids and ferns. As many as a dozen orchid species may be represented on a single tree, and at times the limbs of such trees appear to be so overcrowded that they are in danger of collapsing under the load.

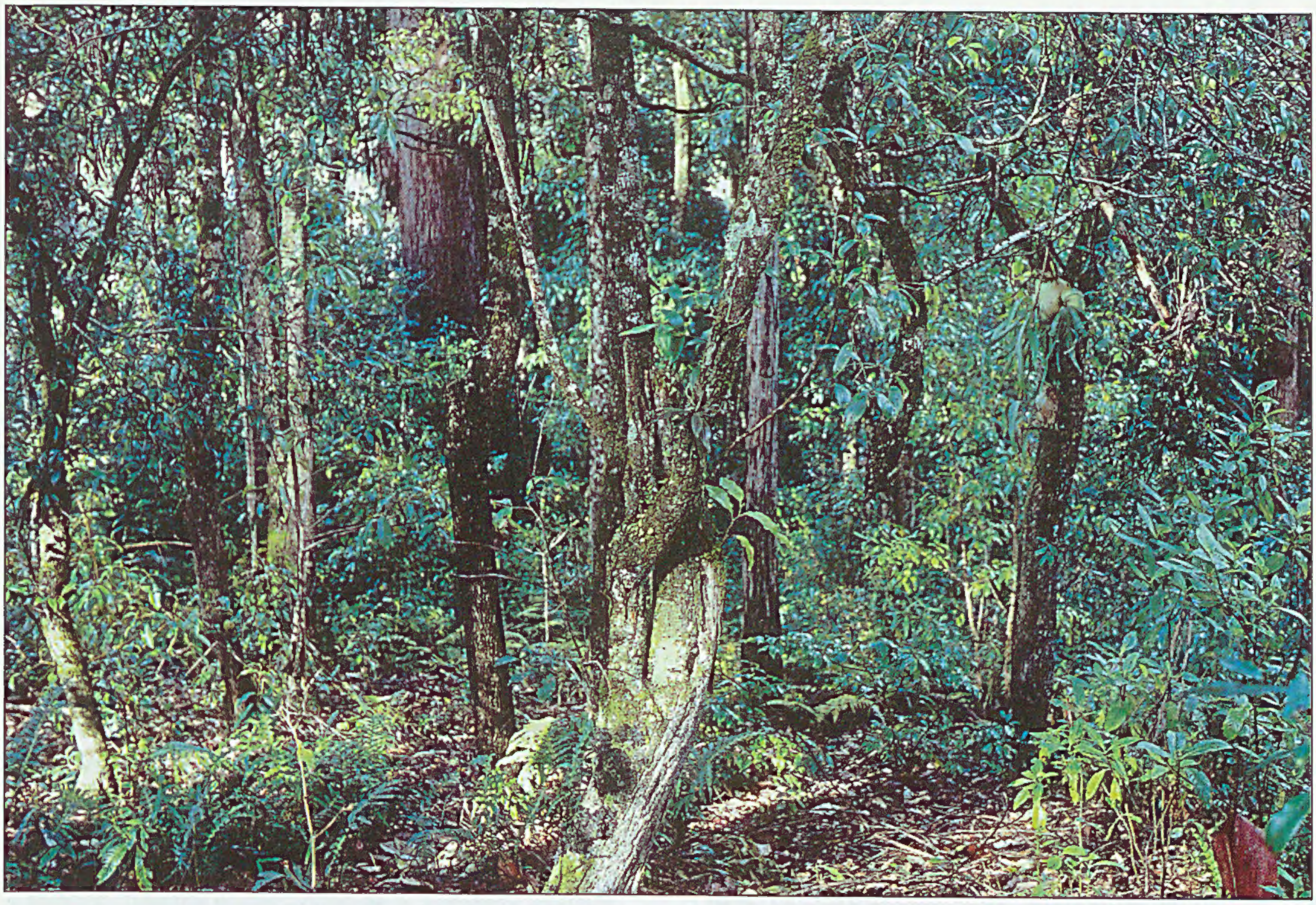
These are not the dense, dripping wet, moss-laden jungles of "rain"-forest fantasy, but, rather, are a depauperate rainforest type with a low canopy and an open understorey, and a relatively dry atmosphere for much of the time. Of course, regular rainfall and low cloud sustain healthy epiphytic plant communities, but the point to be made is that constant wetness is not a feature of this forest type. In many places, the tree-heath forms a part of the understorey community in warm temperate rainforest or in wet sclerophyll forest, but wherever it occurs it seems to carry epiphytic orchids, and is always worth a look.

There is nothing more enjoyable than an orchid expedition into previously unexplored territory, and the thrill of seeing these plants in the wild, combined with the simple pleasures of being in the great outdoors, make for a heady experience. However, unforseen events sometimes intervene, and before making it up into the mountains, I spent several hours of enforced inactivity after bogging my Dad's old Holden in a rocky creek crossing. The local cocky eventually came along and pulled me out with his tractor, his face a study in stoic disapproval.

By the middle of the second day I found myself on a steep hillside, examining each patch of tree-heath as I came to it. I was familiar with all of the orchids I had seen so far on my journey, until I spied some orchid roots snaking along a low hanging branch just above head level. My first thought *Plectorrhiza tridentata*, a common species throughout eastern NSW, but after tracing the roots to their source, I discovered instead an orchid I was sure was not that species. Its falcate, slightly flaccid, thin-textured leaves were just a bit too long and closely spaced together, and the colour didn't look right, but the real giveaway were the developing buds, which were too large for *Plectorrhiza*. The proximal buds were close to opening, and a prominent anterior spur was clearly apparent. I thought for a while I had found *Sarcochilus australis*, which I knew from around Sydney and the NSW south coast, but again, something told me this assessment was wrong.

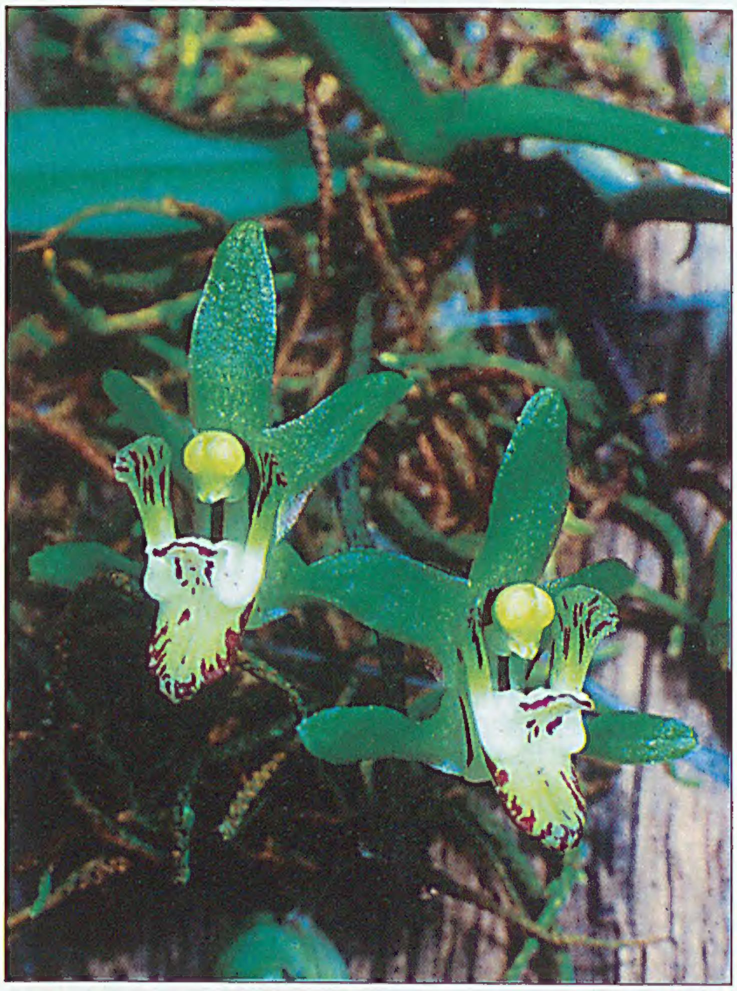
For the next half hour I scoured the immediate area, looking closely at every tree and shrub within 20 metres of my initial find, and to my great pleasure I was able to turn up a dozen or so more plants of the same thing. Some of these were in flower and it was clear I had indeed found something that was new to me. My old battered copy of *Australian Native Orchids* by Barbara Mullins (published in the 1960's without a date by Horwitz International Inc.) provided a positive identification: the orchid was *Sarcochilus spathulatus*.

One thing intrigued me, and that was the variation in flower colour. In the relatively small sample available to me, some were green, others were khaki, and the largest plant I saw carried flowers which were dark brown. What a find!



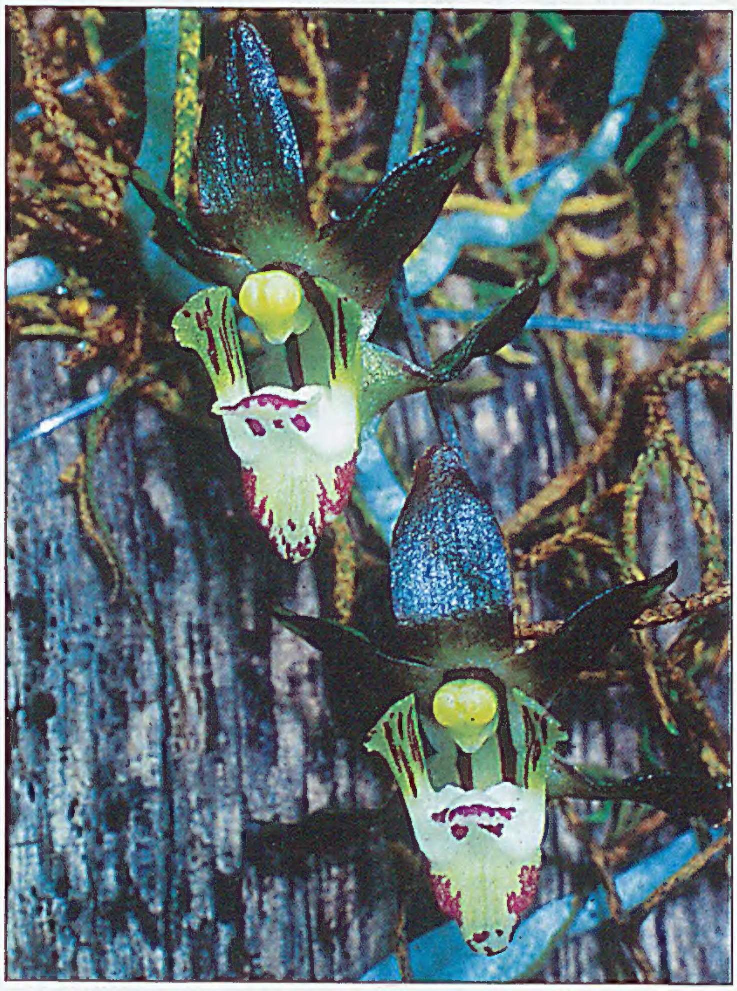
M. Harrison

Habitat of *Sarcochilus spathulatus*



M. Harrison

Sarcochilus spathulatus
Seed raised ex Barrington Tops, NSW



M. Harrison

Sarcochilus spathulatus
Seed raised ex Barrington Tops, NSW

Most plants were growing in the outer foliage of just a couple of trees, with their roots extending along the thin branches for a metre or more. Two or three were located in prickly shrubs nearby, where many of their roots were aerialised into tangled masses. All were growing in quite shady positions.

Since that time I have seen *S. spathulatus* in a number of places, from the McPherson Ranges on the NSW/Queensland border, southwards to the Watagan Mountains, which lie to the west of Lake Macquarie, NSW. The largest colonies I have seen are on the Hastings Range, inland from Wauchope, where in a number of locations, *S. spathulatus* occurs in relative abundance and at fairly high altitudes. Likewise, on the Comboyne Plateau, a little to the south and at lower elevations, *S. spathulatus* is common in some places, growing on trees along and overhanging watercourses. It is often seen growing only a metre or two above ground level on the trunks and main limbs of thin, smooth-barked trees, only a few centimetres in diameter. In the Barrington Tops area, *S. spathulatus* can be found in the rainforests lining the upper Patterson, Williams, Chichester and Allyn Rivers. Around Barrington Guest House, at 350 metres altitude on the upper Williams River, it is a fairly common species.

In the Watagan Mountains, at its southern limit of distribution, it grows in several separate locations. In September 1998, David Banks and I visited an area on the eastern escarpment of the Watagans in search of this species. Years earlier I had seen it in a different spot, and I was keen to relocate *S. spathulatus* on the Watagans.

Along a protected creek with a south-eastern aspect, we saw a number of species, including *Plectorrhiza tridentata*, *Sarcochilus hillii* and *S. olivaceus*. A single plant of *Dockrillia fairfaxii* was also seen, being an interesting recording so close to the coast. We were 50 or 60 metres above the creek, in rocky terrain and getting towards the rainforest margin, when David called out that he had found something of interest. As I clambered over boulders and under fallen logs towards him, he said he had indeed located a plant of *S. spathulatus*, and when I asked why he thought it was that species, he answered "Well the flowers kind of give it away". Smart arse! I guess we found only 6 or 8 plants in a relatively small area, but it was good to see it there. I'm sure if we had looked further we would have seen more. They were not large, the most florific carrying only two flowers.

Many twig epiphytes have proven difficult to maintain in cultivation. As a group, they have specialised requirements that are not easy to replicate in a mixed collection under normal orchid house conditions. Some species are adaptable, and will perform successfully with few problems, whereas others, such as *S. australis* and *S. dilatatus*, are notoriously difficult long-term prospects.

A number of these species will typically grow well for a year or two, and then, for no apparent reason, shed their leaves and die. In a series of articles for *The Orchadian* and *The Orchidophile*, colourful local orchid identity Gerry Walsh has described this pathology as Sudden Sarc. Death Syndrome (SSDS), a most appropriate name for a condition that primarily affects the twig epiphytes. This condition would appear to be caused not by a disease mechanism or insect attack, but by a combination of unsuitable growing conditions (lack of fresh air, poor air movement, temperature fluctuations, levels of humidity or light which are too high or too low, etc.) and inappropriate cultural techniques (watering, feeding, spraying etc.). However, the precise causative factors are not apparent, and even in the hands of experienced growers with good orchid house conditions, this problem still occurs with disconcerting regularity. Frankly, it is difficult to conclude anything other than these "problem" species are not adaptable to long-term cultivation.

The fact that these species usually grow quite vigorously for a certain period after they have been introduce to cultivation would suggest that conditions are initially to the liking, but that over a period of time some vital element is absent. Some stress factor is at work here, but its exact nature is yet to be determined. It has been suggested that over-watering and/or over-feeding may be the cause, and this is certainly worthy of consideration.

Twig epiphytes usually colonise the thinnest, smoothest branches, with their roots extending for a metre or more from the base of the plant, and often with some aerialising.

Their roots do not bury themselves into the bark, nor do they seek out thick moss pads, but instead remain completely exposed to the air. As such they genuinely could be termed aerophytes, in that they derive all their requirements from the atmosphere, living on air as it were. The nutrients available to them from thin host twigs would be minimal, and likewise, although rainfall would provide water periodically, there would be little water-holding capacity, and bare twigs would dry out quickly after rain, leaving them to spend much of their time quite dry. Fogs and mist would probably satisfy most of their water requirements, and high levels of humidity, especially at night, would help to sustain them.

In the bush, these plants do not have somebody coming along and squirting them with a hose every day, and fertilizing them once a week. Although they may respond positively to such treatment for a season or two, it is probably a case of too much of a good thing for too long, and it eventually kills them!

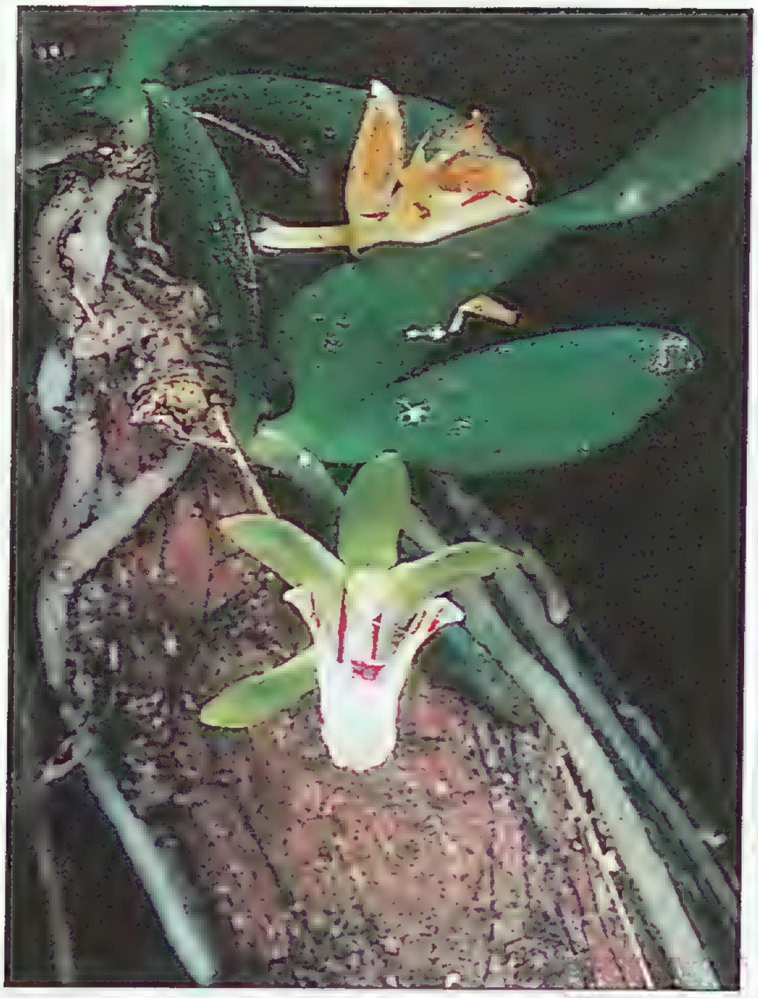
Another theory sometimes put forward is that twig epiphytes are naturally short-lived plants. Certainly, they usually grow quite quickly, and are often large enough to flower and set seed by their second year. This of course is a survival strategy well suited to small growing, low mass plants. Much less energy is required to produce a flowering sized plant of, say, *S. australis*, than *Dendrobium speciosum*, which may take 10 years or more to reach maturity. Many more individual plants can be produced in a much shorter time, so that the strength of the species lies in mass production, rather than a much greater investment in fewer, larger plants. This strategy allows these plants to take advantage of a marginal and often hazardous environmental niche that is simply unavailable to heavier, slower growing species. As long as a fresh generation can be produced within two or three years, it doesn't really matter that individuals are lost on a regular, even frequent, basis. They are being easily and quickly replaced.

That is not to say that twig epiphytes are indeed plants with a naturally short life-span. Although they typically germinate and grow on thin branches and twigs, at times they are seen on more substantial limbs, which are not liable to die-back or to being easily broken off. In such situations they tend to develop into large specimens, which are obviously many years old. It would seem that a significant number of individuals probably are short-lived, not because they are genetically programmed to be so, but because they are growing in unsafe situations.

Probably the most important factor in the cultivation of twig epiphytes is the establishment and maintenance of a suitable orchid house environment. The old growers used to say that you had to "get the air right" and that by "smelling the air" they could tell when conditions were orchid friendly. What they meant was that a large part of good culture is dependant upon the ability of the grower to create an atmosphere where orchids will thrive, as distinct from the things that growers "do" to their orchids, such as watering, feeding, repotting and the like.

The provision of an open, airy orchid house atmosphere, where fresh, humid air is constantly circulating around the plants, not in a gale but as a gentle breeze, and there are no stagnant pockets, is of the utmost importance. Still orchid house conditions must be avoided, and the grower should aim for a fresh, buoyant atmosphere, like a warm spring morning. The more you can open up the orchid house to fresh air, the better your orchids will perform. At the same time hot, windy conditions of low humidity will quickly desiccate many species, especially twig epiphytes, and they will be weakened. Over a period of time, if they are exposed to such conditions too often, they will eventually falter and die.

The grower must strike a balance between prevailing local weather conditions and the desired internal orchid house atmosphere. Some growers need make little adjustment, for they live in regions which are naturally suitable for epiphytic orchids, and they find all they need is a shadecloth covered frame and a hose. Many places on the eastern seaboard would fit into this category. Other, less fortunate growers, who live in areas of greater extremes of weather, find they have to erect more elaborate orchid houses, with solid walls and roofs, air circulating fans, expensive heating and cooling equipment, and automatic irrigation systems. A lot depends on where you live.



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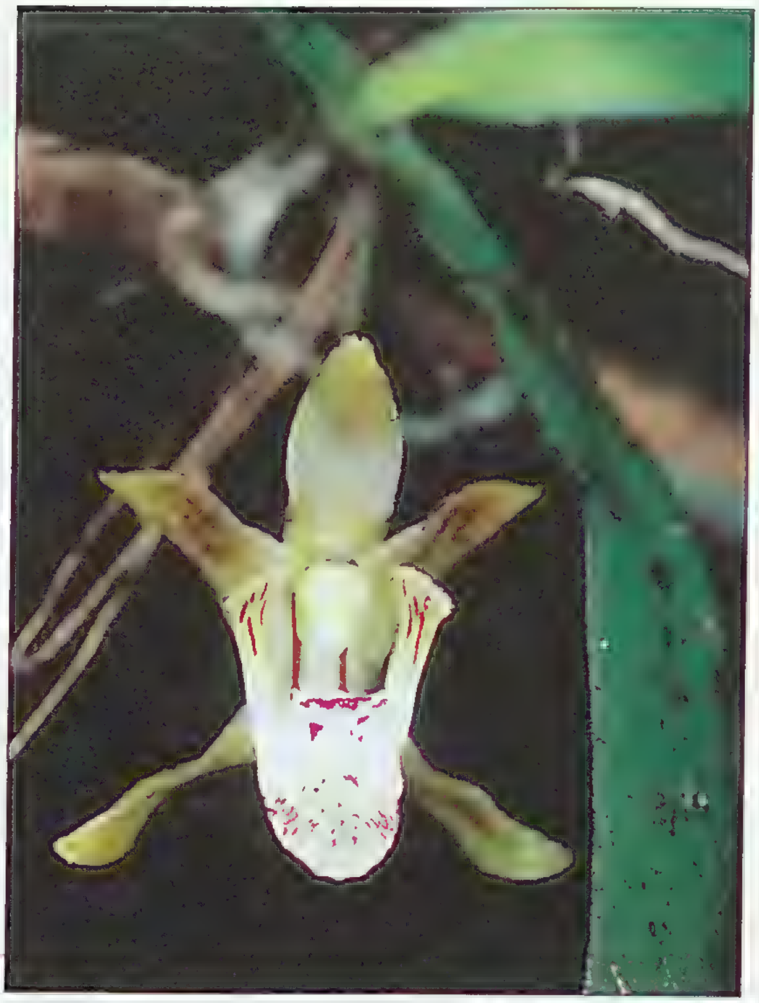
Sarcochilus spathulatus
in situ McPherson Ranges, Qld.



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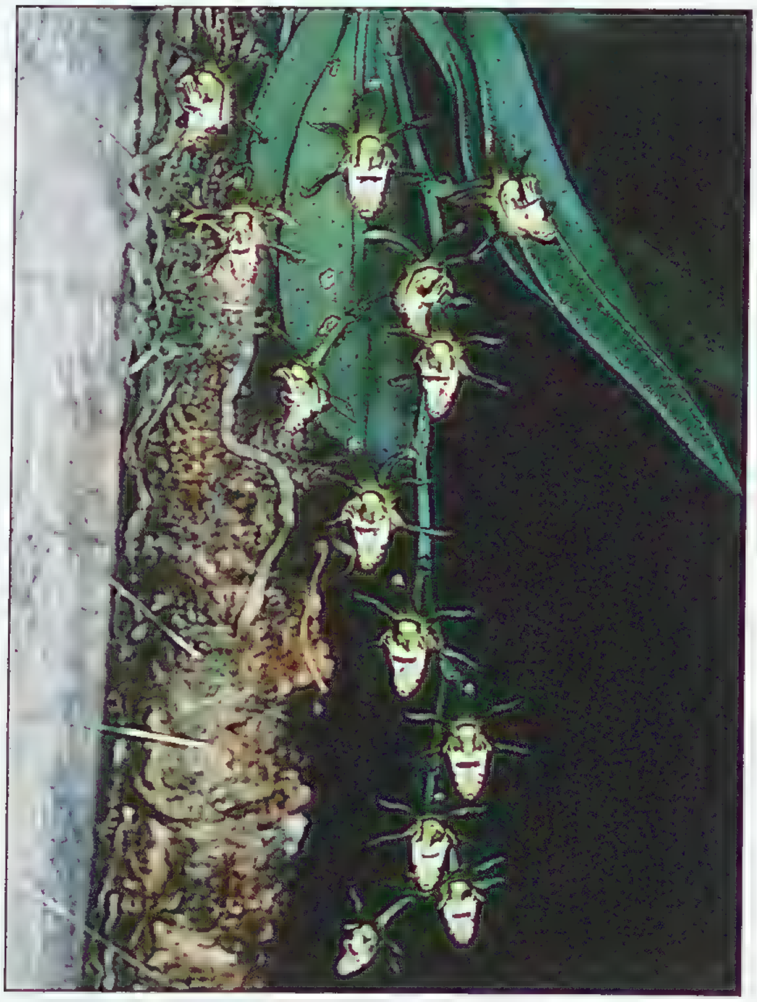
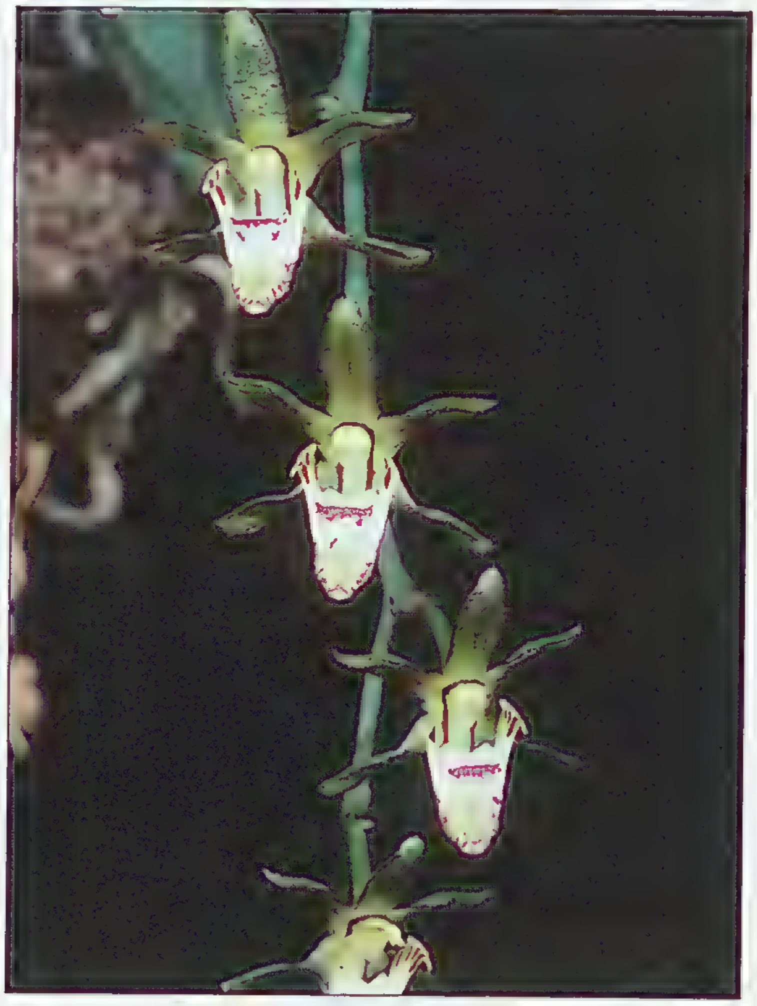
Sarcochilus spathulatus
in situ Watagan Mountains, NSW.



grower, Ray Young © D.P. Banks

Sarcochilus spathulatus
from near Kempsey, NSW.



grower, Ray Young © D.P. Banks

Sarcochilus spathulatus
from near Kempsey, NSW.

Some growers like bare earth on the floor of their orchid house, whilst others prefer a layer of river pebbles or blue metal. Under bench some growers encourage vegetation, such as ferns and mosses, but others will not tolerate it. It is a matter of preference, but the orchid house floor is important because it provides the basis of the internal atmosphere. During warm, dry weather it should be kept damp to provide humidity through evaporation. This will happen most effectively if there is good under-bench air circulation, with fresh air entering by vents or open orchid house sides, and then rising up and passing over and around the plants. Regular misting of the orchid house floor is recommended during warm weather to maintain this process.

Many growers enclose the walls of the orchid house with plastic or alsinite (fibre-glass) to provide protection, but bring the solid covering only down to bench level, leaving the under-bench walls open to the air. The benefits of fresh air cannot be overstated, and in the case of even semi-enclosed orchid houses, the installation of a permanent fan(s) to aid air circulation should be considered.

Not all twig epiphytes enjoy exactly the same conditions. Cloud forest species such as *Sarcochilus serrulatus* and *S. borealis* like a cool, damp and very protected environment, and may need watering at least once a day, whereas "dry scrub" species like *S. minutiflos* and *Saccolabiopsis armitii* need less frequent watering with a decidedly dry period during the cooler months of the year.

Most species, however, fall into a more or less broad middle range category and can be grown together. Of the group, *Plectorrhiza tridentata* is probably the easiest to grow, and would be good for beginners. Next on the list would be *Sarcochilus hillii, S. hirticalcar* and *Plectorrhiza brevilabris*, and from there onwards they become increasingly problematic. For degree of difficulty, on a scale of 1 - 10, with 10 the most difficult, I would rank *S. spathulatus* at around 7 or 8.

The general rules for success with twig epiphytes would be as follows, in no particular order:

1. They are seldom adaptable to pot culture and should be grown on slabs or rafts.

2. A number of different materials are suitable, including natural cork, weathered hardwood palings, weathered bamboo, *Callistemon, Melaleuca* or *Leptospermum* branches.

3. Treefern fibre slabs are generally not suitable for twig epiphytes - they are too moisture retentive and tend to burn or repel orchid roots.

4. Whatever material is chosen, it is best cut into long, thin pieces; say between 20 - 50 cm long, depending on the size of the species being grown, and only 4 - 5 cm in width or diameter.

5. When tying a plant onto a fresh slab, provide a little epiphytic moss around the roots, not too much and not tied too tightly, to create an extra humid micro-environment for the roots during the establishment period.

The successful grower will need to try plants in various locations within the orchid house to find the best spot, having first researched the species to determine its likely requirements. Sometimes it may be as simple as moving a plant to a higher or lower position, or changing the light conditions, or even just turning it through 90 degrees so it faces the opposite way.

It is amazing the number of things growers do in order to achieve the same result: success with orchids, and I am sure that some of the above points will be disputed by other growers. I have seen some of these plants grown beautifully under conditions that I would avoid, or using cultural techniques that make me shudder, and yet the plants are performing strongly. It all comes down to observing your plants closely and providing them with the conditions and the care that work for you. Sometimes it takes a while for all the pieces to fall into place and for your plants to respond in the way you want, but keep trying. The answer is out there.

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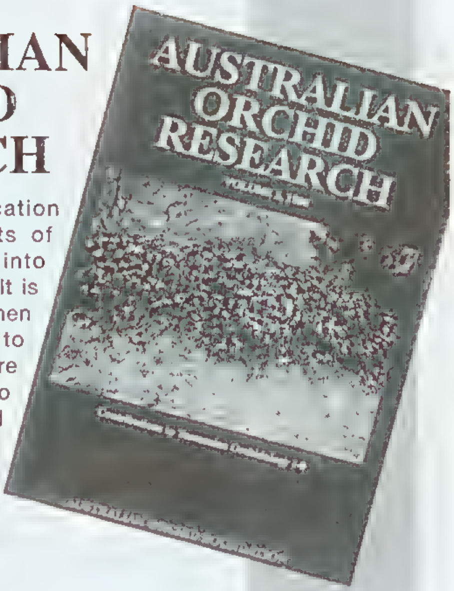

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Dendrobium Jesmond Charm 'Abbey' HCC/ANOS, HCC/AOC-NSW1999

Brian Miller
49 Summerville Street, Wingham NSW 2429

Dendrobium Jesmond Charm is a hybrid made and registered by John Purvis of Brolga Orchids. It is a cross between *D.* Jesmond Treasure (Aussie Ira x Zip) and *D.* Sunglow (*speciosum* x *fleckeri*). The *D.* Sunglow used was the clone known as 'KWR', one of Ken Russell's successful parents.

I purchased a flask of seedlings of this hybrid from John in 1994. After deflasking, all the seedlings were kept and grown on but at first they were a bit slow growing. The first seedling flowered in 1998 and was very nice. In 1999, five or six more plants from the grex flowered, with 'Abbey' the best. This plant was named after our granddaughter.

On 11 July 1999, at the Tinonee Orchids Open Day & Show, *D.* Jesmond Charm 'Abbey' was named Champion Native Orchid of the Show. Not bad considering there were over 90 plants in contention and many of these were exhibited by well-respected (and competitive!) native growers Henk van den Berg and Don Cruickshanks. To top the day off, *D.* Jesmond Charm 'Abbey' received a Highly Commended Certificate from judges from the Orchid Society of New South Wales, and later ratified by the Australian Orchid Council (HCC/AOC-NSW). A week later, at the ANOS Sydney Group meeting, it also gained a similar award (HCC/ANOS). In late 1999, the plant was also awarded an Ira Butler Silver Medal.

Culture of *Dendrobium* Hybrids

I live at Wingham, west of Taree on the New South Wales mid north coast. My orchid house is basically a pipe frame covered with 50% green shadecloth. Small seedlings are grown at one end that is slightly shadier and subsequently moved to the sunnier northern end as they approach flowering size. Plants are potted exclusively in treated pine bark. It is also most important to use pots with perfect drainage.

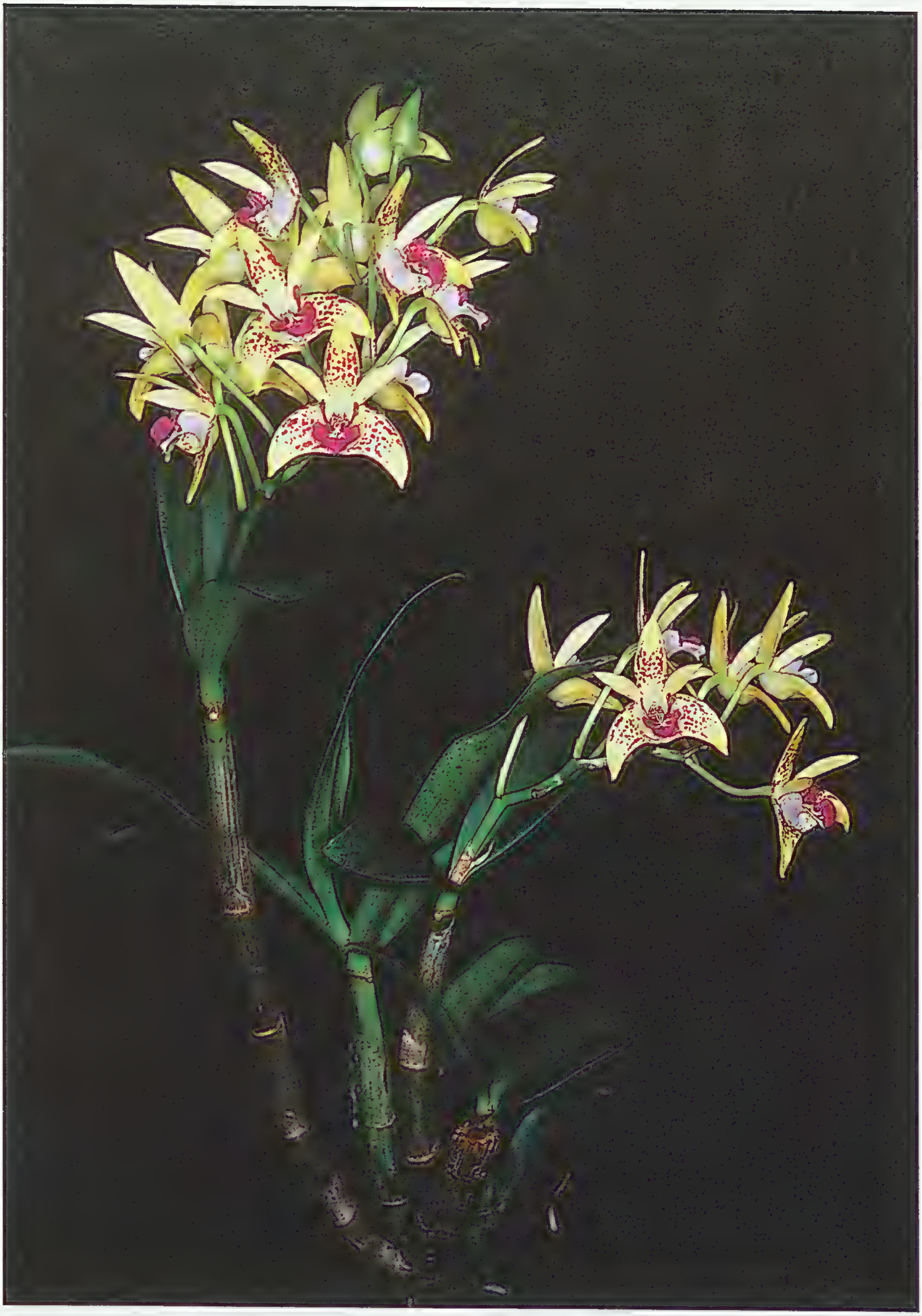
My plants are watered most days during summer and about once a week during winter, either naturally or by me. I add HSO 8 fertiliser at the recommended rate every second or third watering. Wingham gets over 40°C in summer, and watering and/or damping down is done most evenings. In the winter we often experience light frosts with temperatures down to freezing (0°C). During this period, watering is undertaken in the morning – on sunny days if possible. It is most important that the plants are not wet during cold nights.

****

New Australian Native Orchid Hybrid Registrations

New registrations from the Royal Horticultural Society (abridged from *The Orchid Review*)
January - May 2000 registrations. (* = registered under *Parachilus*)

Name	Parentage	Registered by
Dendrobium		
Buzz	Elegant Lace x Hilda Poxon	Down Under N. O.
Carol Doran	Lustrous x Hilda Poxon	Down Under N. O.
Florafest Indigo	Anne's Rainbow Surprise x *kingianum*	Florafest
Jeannie Woolf	Anne's Rainbow Surprise x Red River	Florafest
Maxy's Gold	Brolga x Colonial Bullion	N. Roper
Melanie	Brinawa Charm x Rutherford Blushing Bride	Down Under N. O.
Sarcochilus		
Freckles*	Riverdene* x *weinthalii*	D. Butler
Starhart	Star Struck x *hartmannii*	N. Roper



grower, Brian Miller

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Dendrobium **Jesmond Charm 'Abbey'** **HCC/ANOS, HCC/AOC-NSW** 1999

A Bit About the Rock Orchids (*Dendrobium speciosum* Complex) of Capricornia.

Gerry Walsh
46A Fourth Avenue, Llandilo NSW 2747

Of all the epiphytic orchids native to Australia, probably none of them is as easily recognised as *Dendrobium speciosum*. Show a pot full of it to John and Maryanne Citizen in any suburb and they'll almost certainly know what it is. They might call it a bush orchid, a tree orchid, a rock orchid, a king orchid, or even a rock 'lily' - but they and you will still understand each other.

Mention the Latin name to them and you'll notice a little snigger.
"What did he say it was?"
"I think he means it's a bush orchid".
"Oh, righto - why didn't he say so in the first place?"
"Dunno, he must be a bit of a dill"

For many years the world and I were quite at ease with this most basic determination of course. Then of course, a little bit of knowledge has, for generations now, been described as a very dangerous tool. An especially wise expression indeed, because some of the 'dills' among the masses now charged forth with their own theories and thoughts on a whole range of topics. Native orchids were not spared. While they now possessed the bullets of knowledge, it could be seriously argued that many of the dills in the pickle jar were firing them from underpowered weapons - creating confusion in their wake.

So now this particular dill is going to charge ahead with a couple of his own bullets about the forms *of D. speciosum* from around the Tropic of Capricorn (central Queensland), and he'll probably shoot himself in the foot no doubt. Serves him right.

From when it was first described by Stephen Clemesha in *The Orchadian* 7(5) in 1982, *D. speciosum* var. *capricornicum* has been poorly known and certainly poorly understood.

In *Australian Orchid Research* Vol 1 (1989), Mark Clements transferred the five accepted forms of *D. speciosum* into separate species. But he suggested that var. *capricornicum* is no more than a form of *D. speciosum* var. *curvicaule*, which is generally accepted as having its southern limit at the Eungella region inland from Mackay, several hundred kilometres north of the Tropic of Capricorn. It has been suggested that var. *curvicaule* exists in the Dipperu National Park, about 100 kms to the south of Eungella. This park is no longer open to the public but consists mostly of low altitude riverine flood plains and wetlands and is unlikely to support *D. speciosum* habitat.

In the *Australian Orchid Review* 55(6) back in 1990, Steve Clemesha and David Banks transferred all six varieties *of D. speciosum* to sub species level, thus returning var. *capricornicum* to its own little pedestal. Not to be outdone, Alick Dockrill, in the revised edition of *Australian Indigenous Orchids*, Vol. 1, (1992), assigns the whole lot back to mere varieties of the one and only bush orchid, or to be nicely correct, *Dendrobium speciosum*.

I won't go over the original Clemesha description in minute detail. But in the broadest sense, the things that set var. *capricornicum* apart from the other varieties of *D. speciosum* are its apparent dwarfed vegetative characteristics and its inclination to dwell in close proximity to the Tropic of Capricorn. Also, some of the more coastal forms seemed to flower several months earlier then those from further inland. Clemesha gave three major areas of distribution for var. *capricornicum*. These are the Carnarvon Gorge (about 300 kms inland), the Blackdown Tableland (180 kms inland) and the coastal ranges and volcanic plugs around Rockhampton and the coast. Basically the *D. speciosum* occurs within approximately 100 kms of the tropic and 300 kms west to east but with large tracts of unsuitable habitat between these three major strongholds.

Over the past 13 years since I acquired my first specimen of var. *capricornicum* I have become more and more entangled in an internal struggle to define just what this variety really is. I gradually come to realise that there really wasn't anybody around my neck of the woods who could convincingly shed light on my questions.

After getting into severe arguments with myself, I came to realise that this puzzlement was becoming a threat to my well-being. If I was going to retain my sanity I needed to get off my rear end and head north to investigate the situation in person. What I found was mostly confusion but at least I had first hand knowledge to sift through and hopefully digest with positive results. So here's what I learnt.

Firstly, I refuse to enter into the debate as to whether it is a species, sub-species or a variety. I found out one thing for certain that the plants of *D. speciosum* that grow around the Tropic of Capricorn are certainly different from the forms that occur further north and south of that imaginary line.

One aspect concerning var. *capricornicum* distribution is black and white to me: the plants from the Carnarvon, Blackdown and coastal areas bear no resemblance to each other at all. I see them as all quite distinct.

I doubt that such a sweeping observation could be made from merely looking at plants in a bushhouse. To get a feel for each region it was really necessary to be on site in the flesh. Only then could it be possible to see all the environmental aspects that affect the appearance and growth habit of plants in various areas and over as wide a range of specimens as possible.

My one visit to the Carnarvon Gorge was made in late October 1995. I was able to see around 100 plants clinging to the sandstone that the Gorge is famous for. Our visit was six weeks after the flowering season unfortunately. But it did allow me to make a couple of decisive observations that could not be noticed in the bushhouse situation.

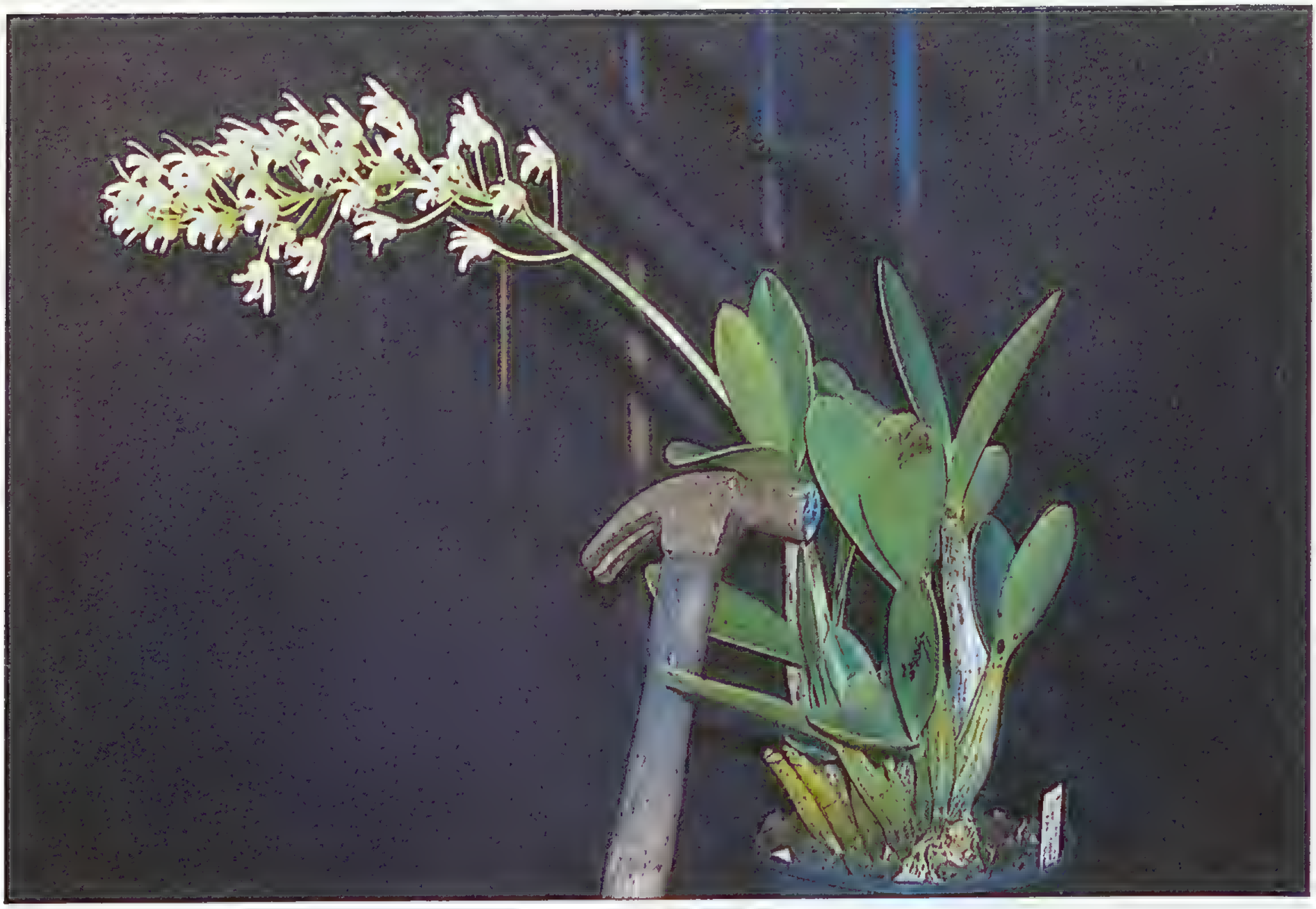
Firstly, three separate clones were seen growing in trees. To my knowledge, no recording has been made of this epiphytic ability of so-called var. *capricornicum*. Conditions were dark and cool and they were quite close to a running creek. Rock-dwelling plants were common in the area as well. The only other epiphytic orchids in the vicinity were *Sarcochilus ceciliae* and *Sarcochilus dilatatus*, both of which were scarce. The clumping habit of the *D. speciosum* in Carnarvon is very reminiscent of the *D. kingianum* subsp. *carnarvonense* that is quite common in the Gorge, and is one of the distinguishing features which sets that form of *D. kingianum* apart from the type form. They each seem to readily send out new pseudobulbs from eyes several inches up from the base of the old pseudobulbs.

This leads to the formation of scrappy, witch's broom clumps of *D. speciosum* with growths that tend to cling flatter against their host substrates then is the case with other varieties. Clumps don't appear to form much in the way of size or compactness at all. However, apart from plants in full sun, which are tough and short-caned, as one would expect, pseudobulbs are not particularly dwarfed at all and commonly grow to 30 cm long. The few old inflorescences noted suggest that the act of flowering is not as commonly achieved as might be expected, but this is probably caused by the shady conditions where most plants were observed.

Bushhouse observations of the inflorescences and flowers themselves suggest an ancient association with *D. speciosum* var. *grandiflorum*. Flowers are mostly a bright yellow and have a tendency to form 'circles' with their lateral sepals. I have only flowered about eight clones in the bushhouse but one other trait is obvious in all of them. There is only a very short peduncle in the Carnarvon form, and this causes a bunching of flowers down in the leaves.

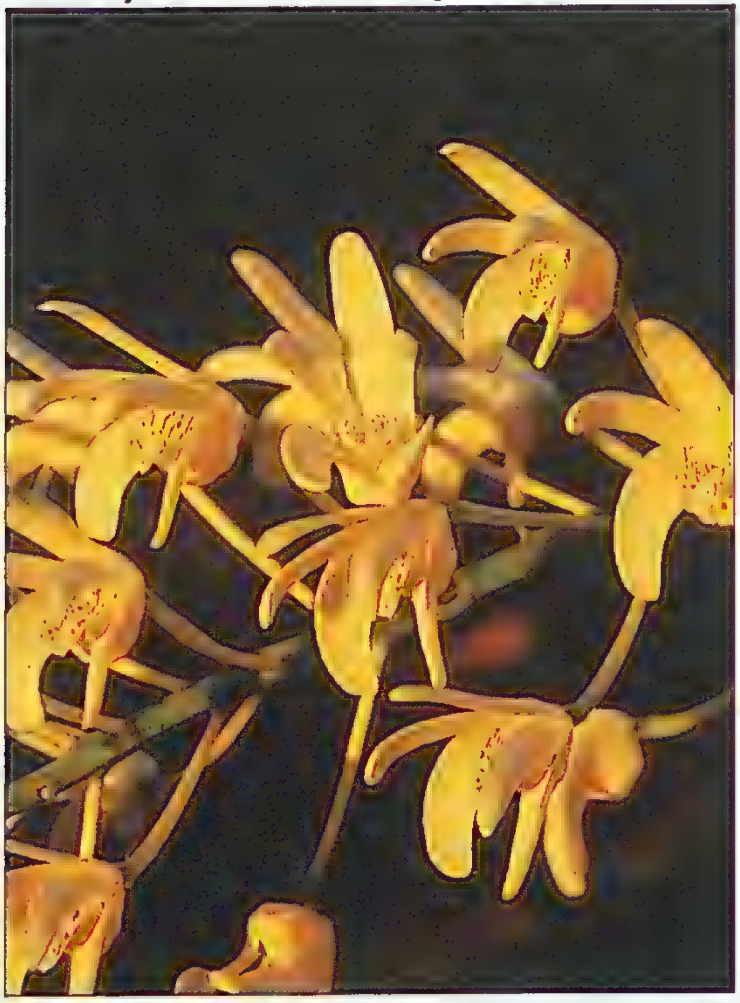
The Blackdown Tableland is a vast area of Sandstone escarpments and gorges that looms up lofty from the surrounding flat country between Emerald and Rockhampton. In fact it reminds me strongly of the drier sections of the Blue Mountains near Sydney. I've been up there twice: October 1995 and September 1999. There is a remarkable amount and a remarkable variety of *D. speciosum* up there. But I just can't reconcile much of it at all with the published accounts of what represents var. *capricornicum*.

During our wanderings around the Blackdown we saw plants that had flowered at sizes between tough little critters with bulbs only 8 cms long, all the way up to some as long and thick as my forearm.



G. Walsh

Den. speciosum var. capricornicum ex Mt. Hedlow, Queensland



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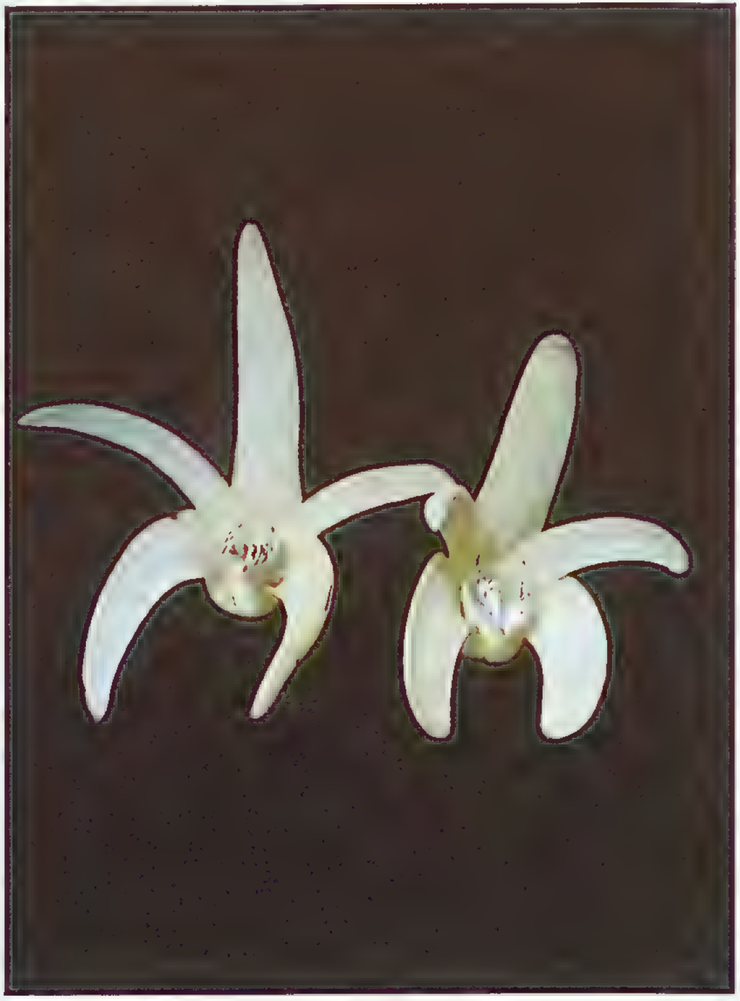
Den. speciosum var. capricornicum
ex Mt. Hedlow, Queensland



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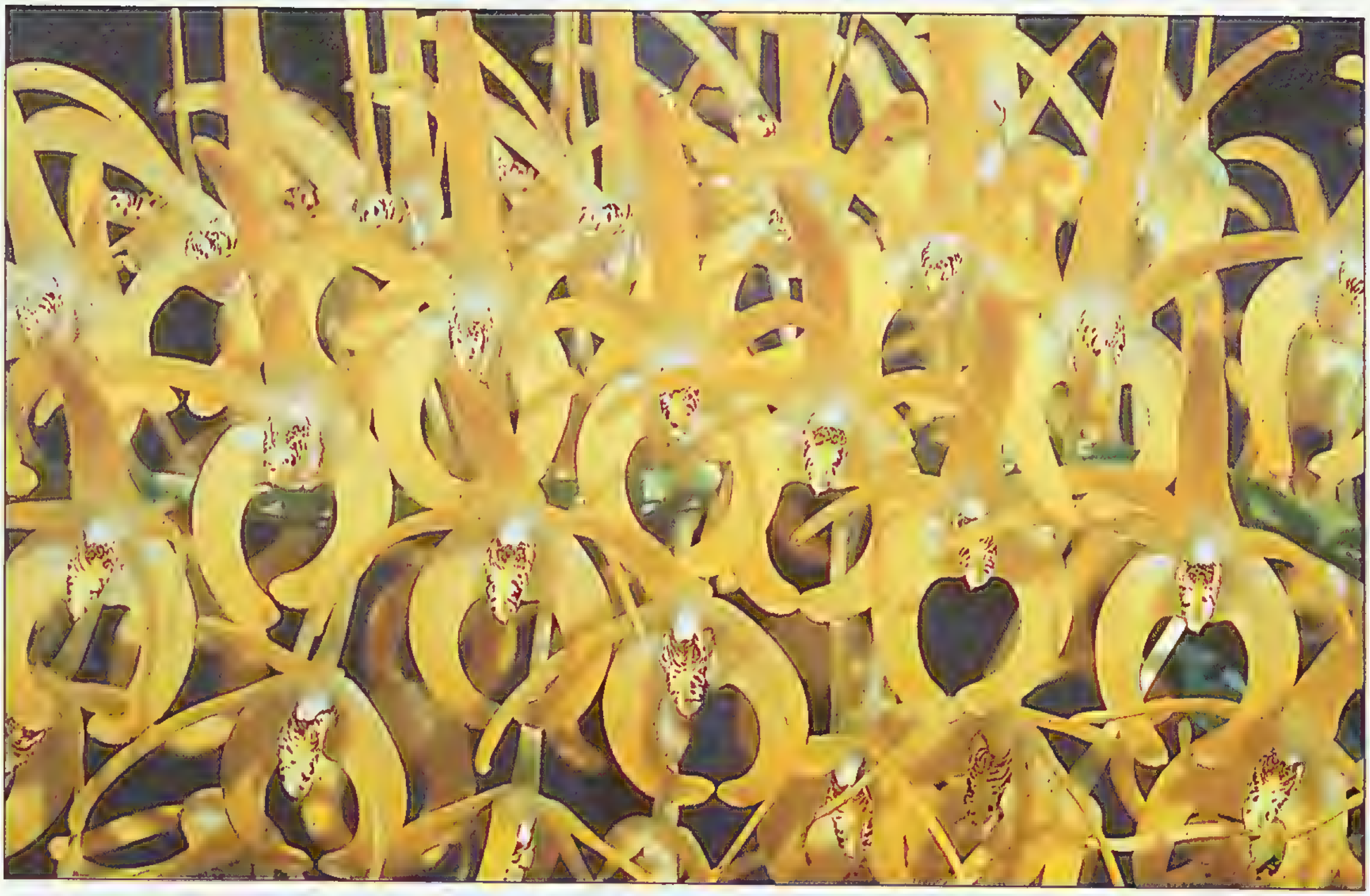
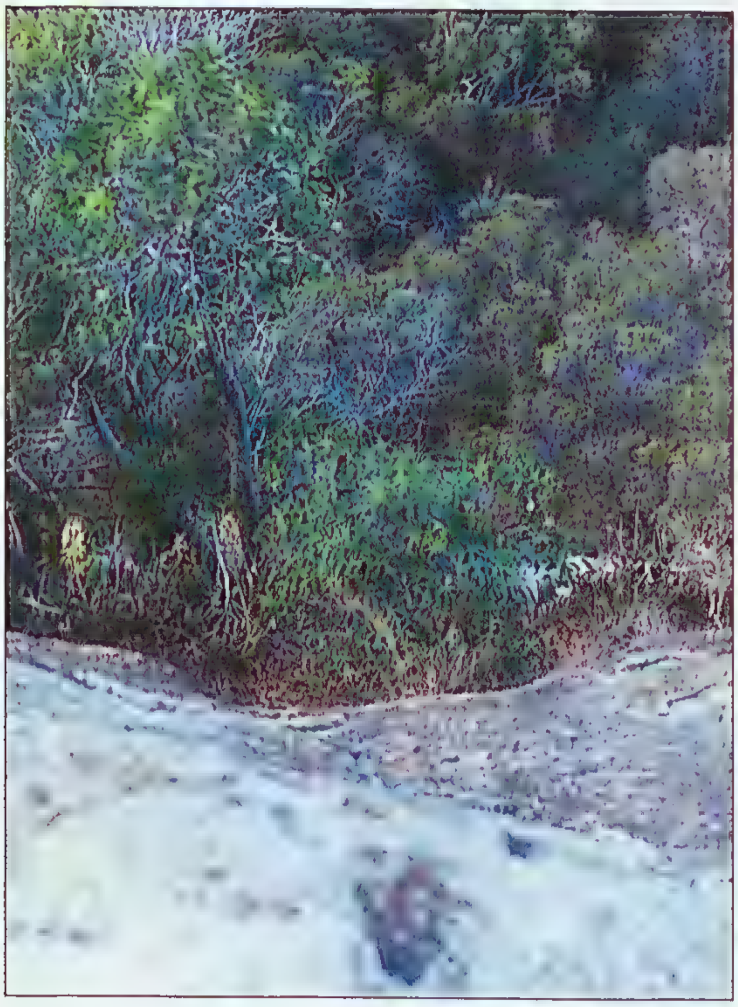
Den. speciosum var. capricornicum
2 clones from Mt. Hedlow, Queensland



G. Walsh

Den. speciosum var. capricornicum
Clone from Carnarvon Gorge, Queensland - very similar to var. *grandiflorum*



G. Walsh

Den. speciosum var. capricornicum
in situ, Pine Mountain (Rockhampton), Qld.

M. Harrison

Den. speciosum var. capricornicum
in situ, Blackdown Tableland, Queensland.

Some also sported bulbs the equal in robustness to nearly anything I've seen in var. *speciosum* in New South Wales. On average however, length of pseudobulb was far in excess of the stated 15 cm maximum length for var. *capricornicum*, and 25-30 cms would seem to be a common size.

Variation in thickness of pseudobulb was another aspect of Blackdown plants. There were tall skinny ones as well as thick robust ones. That trend continued down to the shortest ones. All *D. speciosum* exhibits such variation I know, but it was certainly much more obvious on Blackdown plants.

The real difference with Blackdown *D. speciosum* is in the flowers. Horticulturally speaking, they are, as a form, vastly superior to any other 'capricornicums'. In the main the inflorescences are more erect then either the coastal or the Carnarvon forms. As well, the flowers have more substance and are less spidery. Their real charm is found in the way that the flowers line up in nice rows. Flower colour is mostly light yellow with the odd cream. One piece sent to me turned out to be a very good white the only one of that colour I know of.

It seems to me that I've just described pretty well a typical plant of var. *curvicaule*. So, from my point of view, the Blackdown forms of *D. speciosum* are more representative of var. *curvicaule*. To further support this, a cross section of all the pseudobulbs from the Blackdown so far examined, shows distinctive egg-shaped, or flattened, pseudobulbs that taper only slightly at the apex just like in var. *curvicaule*.

On this point at least the Blackdown plants differ from both the Carnarvon form and the coastal form. The Carnarvon ones can be slightly elongated in cross-section but have a tendency to taper towards the apex and often have a ribbed appearance, reminiscent of var. *grandiflorum*. On the other hand, the coastal forms are virtually round in cross-section but they also tend to taper towards the apex.

The coastal form of var. *capricornicum* is limited in distribution simply because it has very little suitable habitat to utililise. It's home is the volcanic plugs that seem to erupt up from the flat country in the Rockhampton district. It also colonises suitable rocky sites in the dry ranges that are common about Rockhampton as well.

Ken Russell tells me there are some isolated plugs, a good deal further west and north of Rockhampton that support colonies of *D. speciosum*. As nothing was flowering at all during my 1999 visit to Blackdown and the coast, I didn't pursue these isolated outposts. In situ, I have only observed it on one volcanic plug. It was quite a rugged, steep environment and I would describe its occurrence as patchy. I have pieces from two other plugs as well and they are indistinguishable from specimens growing at my location. This is the form that Clemesha was referring to when he described var. *capricornicum*.

My observations are in agreement with Steve's in all but one of the major aspects. This is in the length of the pseudobulb. On my mountain, plants were seen with bulbs obviously over the published maximum length of 15 cms. Also, on one particularly heavily colonised ledge, there were several clumps around a metre wide. The bulbs in this clump were certainly around 30 cms long. These giants none-the-less conformed to Steve's point that the leaves are stiff and erect and that the 'nests' of leaves topping each bulb are obviously smaller in proportion to the pseudobulb size then in any other form of *D. speciosum*.

This dwarfism of leaves, regardless of bulb size, is the most distinguishing feature to look for when discussing var. *capricornicum*. This feature also maintains itself in the bushhouse despite the bulb size generally increasing under good cultivation the leaves will always look too small for the pseudobulb.

These big clumps were flowering in early September 1995. Steve states that the coastal form of var. *capricornicum* flowers around 8-10 weeks earlier (June-July) then the Blackdown and Carnarvon forms (mid September). This is certainly true in cultivation but not inevitable. They will flower occasionally in September like any other *D. speciosum*. However, as no other clumps on my mountain were flowering, I don't think these large clumps were typical of the usual flowering period in general.

The flowers are something of an enigma to me. Yes, they are usually a kind of dirty, dull white colour. The inflorescences are not crowded and have a long peduncle compared to the inland forms. I used to think that its flowers were fairly uniform in shape and represented no particular variety except perhaps a poor var. *speciosum* from NSW or even a very poor var. *curvicaule*.

Last year I flowered several plants originating from another volcanic plug. One of these was a typical shape but the other a perfect var. *curvicaule* shape. Colour was identical and typical. Plant form was typical of the coastal var. *capricornicum*. These two clones were collected personally by my benefactor and I'll vouch for his reliability. Once again I was totally confused.

If Clements had perhaps examined plants of *D. speciosum* like this maverick clone of mine, it's no wonder he determined the whole race of "capricornicums" to be of var. *curvicaule* in origin. This is certainly a possibility. I have seen plants of *D. speciosum*, with old spikes on board, growing on rocks at Cape Hillsborough, just north of Mackay and 300 km north of these volcanic plugs. These plants were tiny and typical of var. *capricornicum* in size. Yet they must have been var. *curvicaule*, mustn't they? Or were they a northern outpost of var. *capricornicum*?

On the other hand, I have seen a lot of var. *grandiflorum* flowering in situ over the years, much of it south of Rockhampton. Huge plants with bulbs up to a metre long, and golden flowers up to 95 mm deep and inflorescences up to 75 cm long. I cannot think of a single plant of var. *grandiflorum* flowering off stunted 15 cm pseudobulbs amongst the hundreds I've come across. I've never seen small off-white flowers on a big var. *grandiflorum*, nor huge golden flowers on a var. *capricornicum*.

One feature that sets the coastal form apart from the inland forms, and indeed apart from all varieties in Australia, apart from var. *pedunculatum*, is the peduncle. It is very long, being 35% to 50% of the inflorescence length. "Capricornicum's" nearest geographical relatives, var. *grandiflorum* to the south and var. *curvicaule* to the north, have only short peduncles. So where has the very long peduncle come from in these coastal forms? I believe the coastal forms of var. *capricornicum* are more closely related to var. *curvicaule* then to anything else. I cannot get those Cape Hillsborough plants out of my mind.

Now I'll quickly summarise these words of wisdom into a clear and condensed form. The flower shape and form of these three 'races' of *D. speciosum* are notoriously variable and it is doubtful that any concise determination based on floral structure could ever be formulated.

The Carnarvon Gorge forms are, I believe, most closely related to var. *grandiflorum*.

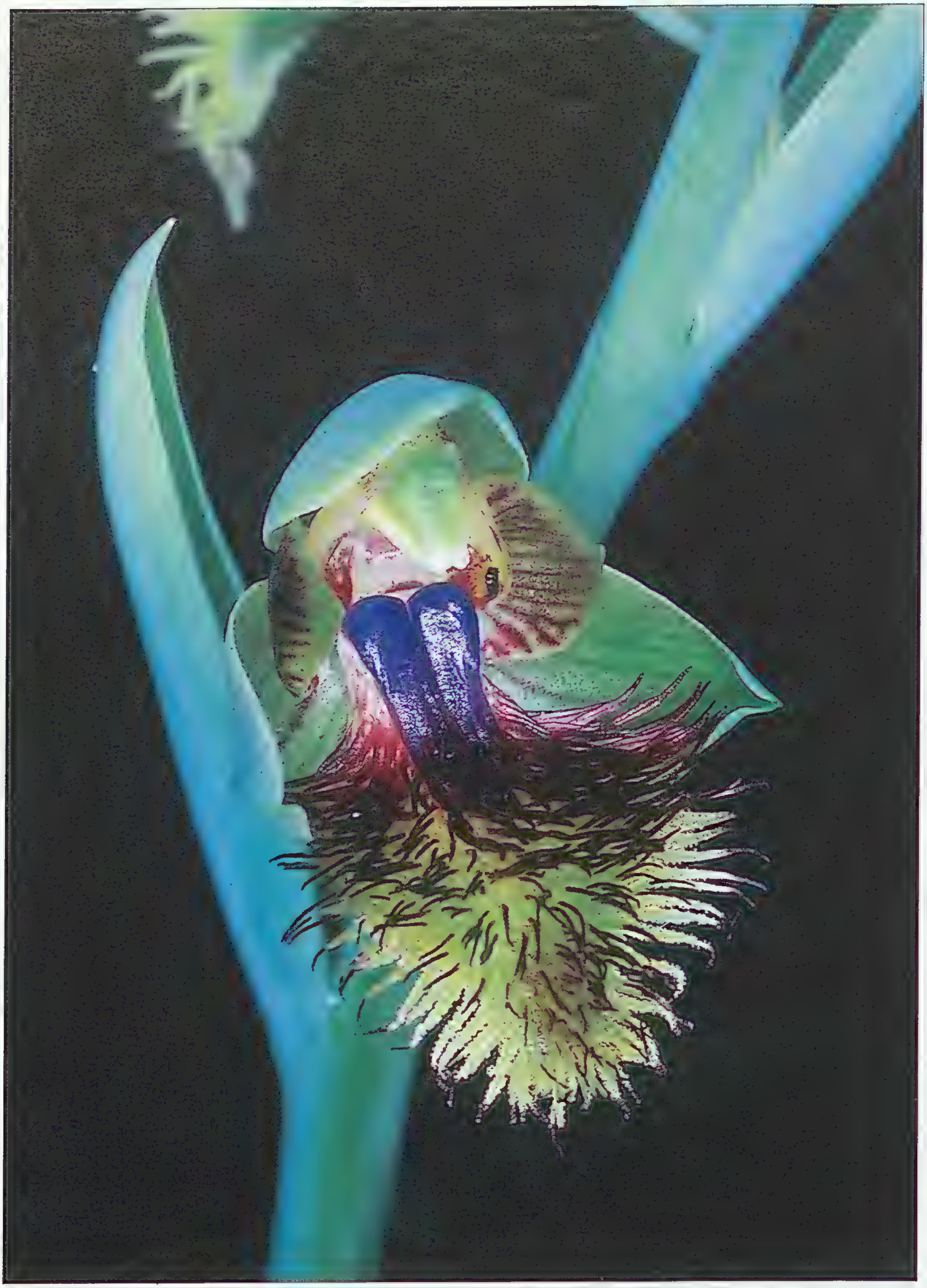
The Blackdown Tableland form, in my opinion, is quite closely related to var. *curvicaule*.

The coastal forms represent a long isolated race of plants with links to var. *curvicaule*. These plants are easily recognised by their physical characteristics, which do not appear to diminish appreciatively under cultivation. They also maintain the trait of mostly flowering several months earlier then do all other *D. speciosum* varieties, even when in cultivation in temperate zones. The bushhouse tends to level out the flowering season of all *D. speciosum* varieties, no matter where they originated. But not these coastal forms from the tropic of Capricorn!

Conclusion? The Carnarvon and Blackdown forms of *D. speciosum* are not representative of the var. *capricornicum* as we know it and at present their status is not satisfactorily designated. The costal form of *D. speciosum* is the only candidate for the title of '*capricornicum*' but be it a species, sub-species or a form, is a matter for the individual. I will continue calling this 'race' *Dendrobium speciosum* var. *capricornicum*.

What to call it is best left entirely up to the whim of any dill willing to stick his or her neck out. But don't push in, because the queue starts behind me.

✿



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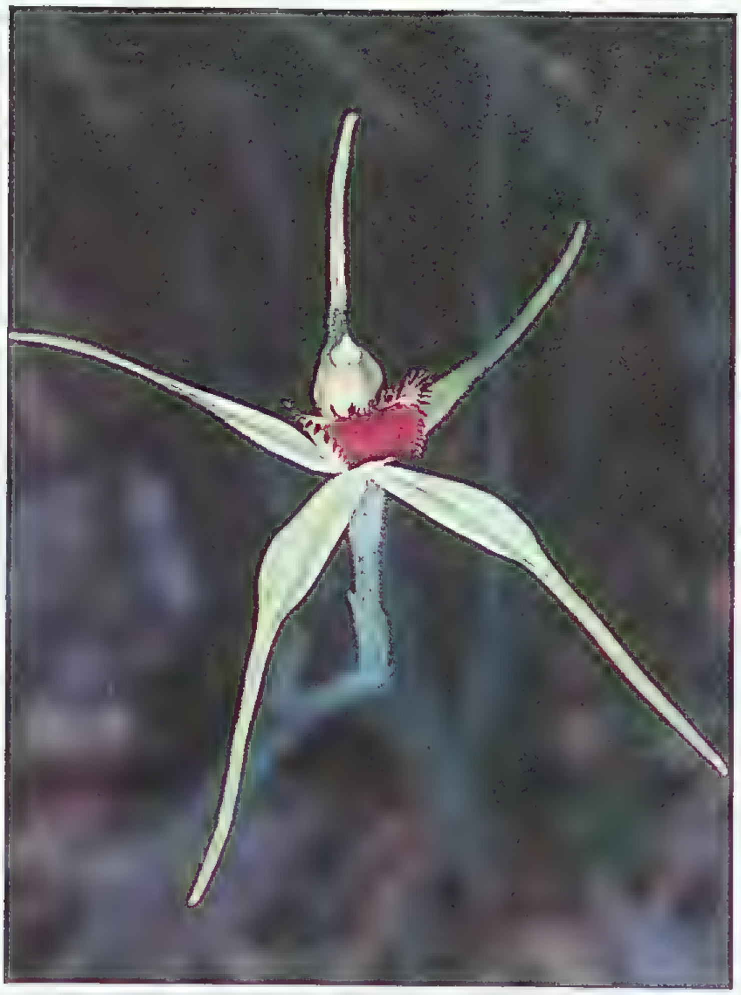
Calochilus campestris
in situ **- Crib Point, Victoria**



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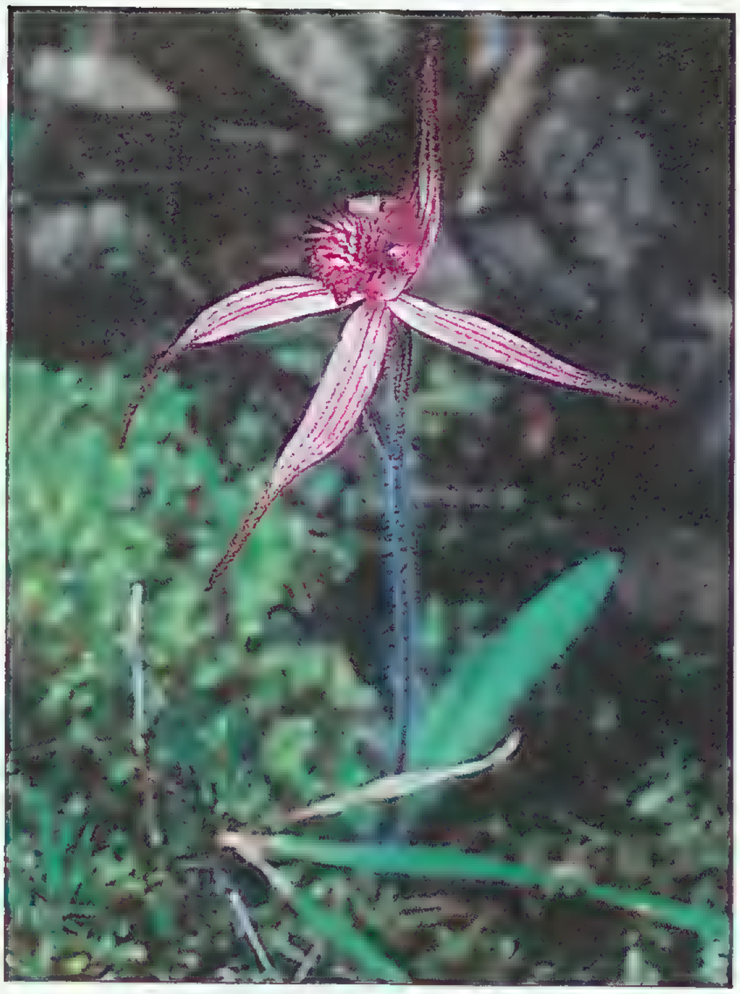
Caladenia flavovirens

in situ - Healesville, Victoria



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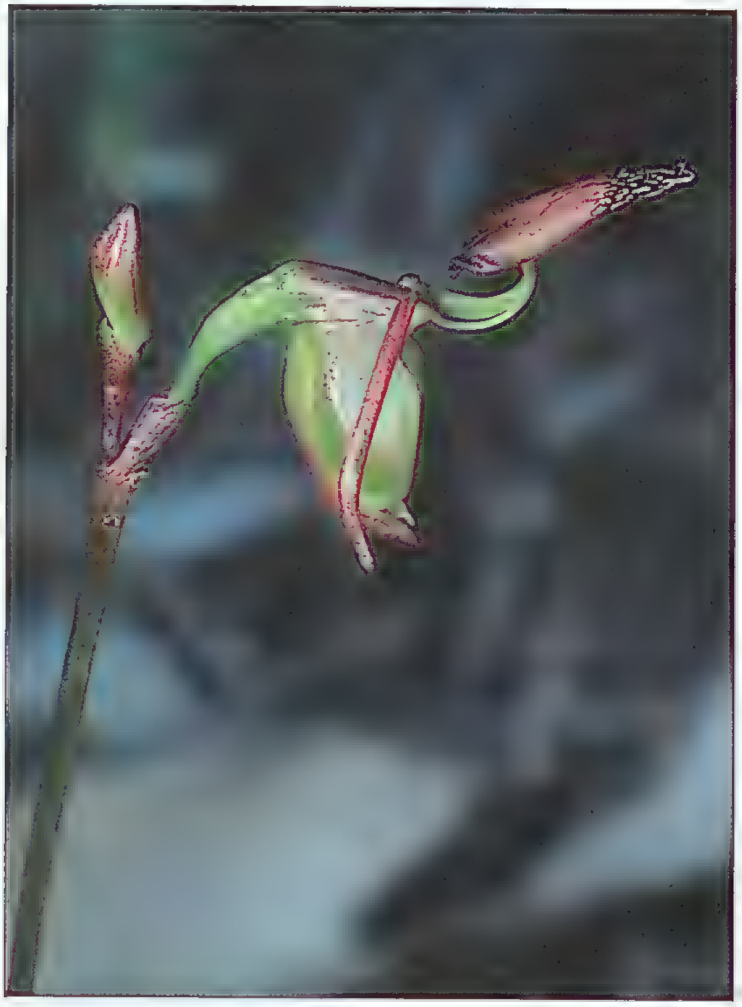
Caladenia rosella

in situ - Cottlesbridge, Victoria



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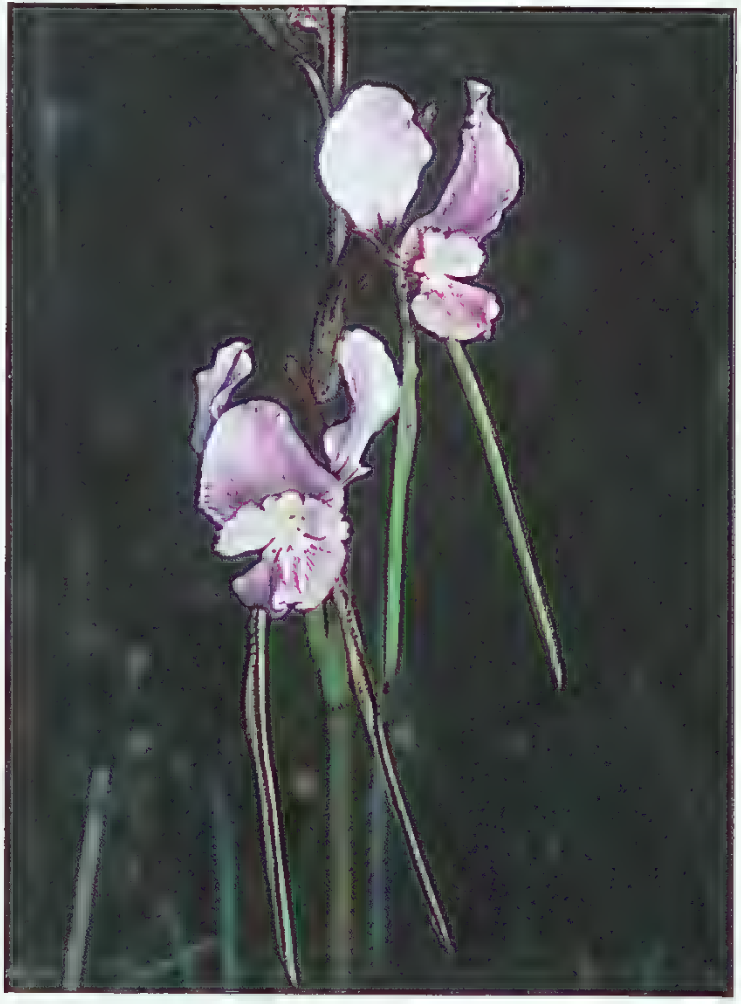
Caleana sp. aff. *nigrita*

in situ – Roses Gap, Victoria



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Diuris punctata

in situ - Boorhamen, Victoria

An Introduction to the Wild Orchids of Victoria.

Gary Backhouse
7 Avandina Crescent, Greensborough Vic. 3088

The State of Victoria lies in the southeast corner of the Australian mainland, and covers an area of about 227 000 km^2, less than 3% of the total land area of the Australian continent. Much of the north, west and coastal south of the State comprises low altitude undulating plains, while the east is dominated by the foothills and mountains of the Victorian uplands, ascending to almost 2000 m altitude at the highest point. The uplands extend through central Victoria (generally at lower altitudes), ending at the Grampians in the west. Victoria lies between 34° and 39° S latitude.

The climate is typically one of a cool, wet winter and spring and a hot, dry summer, although this is marked by regional variability and extreme seasonal fluctuations. Annual rainfall ranges from under 250 mm in the semi-arid northwest to over 2000 mm per annum in parts of the eastern highlands.

Despite the small land area, Victoria supports a wider range of broad ecosystem types than any area of a similar size in Australia. Habitats include coastal scrubs, heaths, native grasslands, drier mallee habitats, wet and dry lowland, foothill and montane forest including areas of cool and warm temperate rainforest, alpine woodlands and herbfields, and a variety of wetland types. Orchids can be found in just about all of these native terrestrial habitats in Victoria, growing in sand dunes behind beaches to the top of the highest mountains, from the dry mallee 'deserts' to permanent wetlands.

Victoria has over 300 species of orchids in 31 genera, and about 70 naturally occurring hybrids have been identified in the field. About 20% of the species are either endemic or now restricted entirely to Victoria. Reflecting the temperate, variable climate, only five species are normally epiphytes or lithophytes, while the majority of species are terrestrial orchids. This is a rich orchid flora, comparable with any area in the world for the diversity of terrestrial orchids. Some sites have a diversity of around 50 species in 5 hectares.

Most terrestrial orchids grow annually from subterranean tubers. They have a dormant stage during the dry summer, and grow and flower during the cooler, wetter autumn, winter and spring. Peak flowering of lowland species occurs during spring, especially October. Alpine species have a winter/spring dormancy, with growth and flowering during summer and autumn.

The form and size of Victoria's orchids is extremely varied. Among the smallest orchids are species of *Microtis* and *Genoplesium*, with plants only a few centimetres tall and flowers a few millimetres across. Plants of some *Corybas* species may only reach 1 cm in height.

The tallest orchids include the magnificent *Thelymitra aristata*, reaching 1 m in height, with up to 40 deep blue flowers, all open at once; species of *Dipodium* reaching up to 1 m tall with up to 60 flowers; *Gastrodia procera* reaching 1.2 m tall with up to 70 flowers, and *Prasophyllum elatum* reaching 1.5 m in height with up to 60 flowers.

The largest orchid occurring in Victoria is probably the lithophytic *Dendrobium speciosum*, with large clumps extending a metre or more across, pseudobulbs and leaves to 80 cm long, and long arching inflorescences with up to 100 flowers.

Amongst the showiest orchids are the flamboyant spider-orchids of the genus *Caladenia* – the superb white *Caladenia venusta* with flowers up to 20 cm tall and 15 cm wide, and the deep red *Caladenia formosa* with flowers up to 16 cm tall and 12 cm wide. The wonderful shapes, forms and habits of many orchids are reflected in the colourful common names used, including the duck-orchids *Caleana*, the beard-orchids *Calochilus*, the bird-orchids *Chiloglottis* and the sun-orchids *Thelymitra*.

The diversity and richness of this wonderful orchid flora is still being unlocked, with new discoveries and descriptions occurring every year. Recent discoveries include *Acianthus collinus*, found in north-eastern Victoria in 1999, and the stunning *Diuris tricolor*, found in Victoria in 1997 and still only known from a single plant.

Taxonomic research into orchids continues apace, with about 25 newly described or redefined species added to the Victorian orchid list in the last 5 years, the most recent being *Prasophyllum fosteri* and *Prasophyllum niphopedium*. There is more to come, with at least 20 undescribed (or unidentified) orchids, particularly in the genera *Caladenia*, *Prasophyllum*, *Pterostylis* and *Thelymitra* that require further taxonomic investigation.

An unwelcome, if inevitable, addition to the orchid flora is the exotic species *Disa bracteata* (formerly *Monadenia bracteata*), native to southern Africa. Already established in Western Australia and South Australia, this orchid was first identified in Victoria in 1995. It is now known from at least 5 widely separated sites, and will almost certainly spread further.

It is somewhat ironic that, as our knowledge of and interest in orchids has increased substantially over the last couple of decades, so the threat to their survival has never been greater. At least 5 species are now believed extinct, and at least / of the State's orchids are in serious decline or threatened with extinction.

Despite recent advances in conservation, many orchids are still perilously close to extinction. *Caladenia thysanochila* has not been seen since its original discovery in 1988, *Calochilus richiae* is down to a handful of plants, and *Diuris fragrantissima* is reduced to 3 plants in the wild, although fortunately about 200 plants survive in cultivation. Many grassland orchids such as the newly described *Prasophyllum fosteri* now survive only as small, isolated populations along roads and rail lines. On the positive side, numbers of the highly endangered spider-orchids *Caladenia amoena* and *Caladenia rosella* have increased due to intensive site management including caging plants, hand pollination and weed control.

Victoria has a wonderful, rich orchid heritage. It is only through increased education and awareness, accepting responsibility, and careful protection and management that we can protect this irreplaceable asset for future generations, so that all can rejoice in the beauty of orchids in the wild for many years to come.

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Books on the Orchids of South-eastern Australia

Over the past five years, those interested in the orchid flora of south-eastern Australia have been blessed with the release of four first class texts. I have no hesitation in recommending these for the comprehensive information they contain and also the top colour photography. These are available from the Australian Orchid Foundation (03 9379-3570) and/or Orchidaceous Books (07 4122-1251).

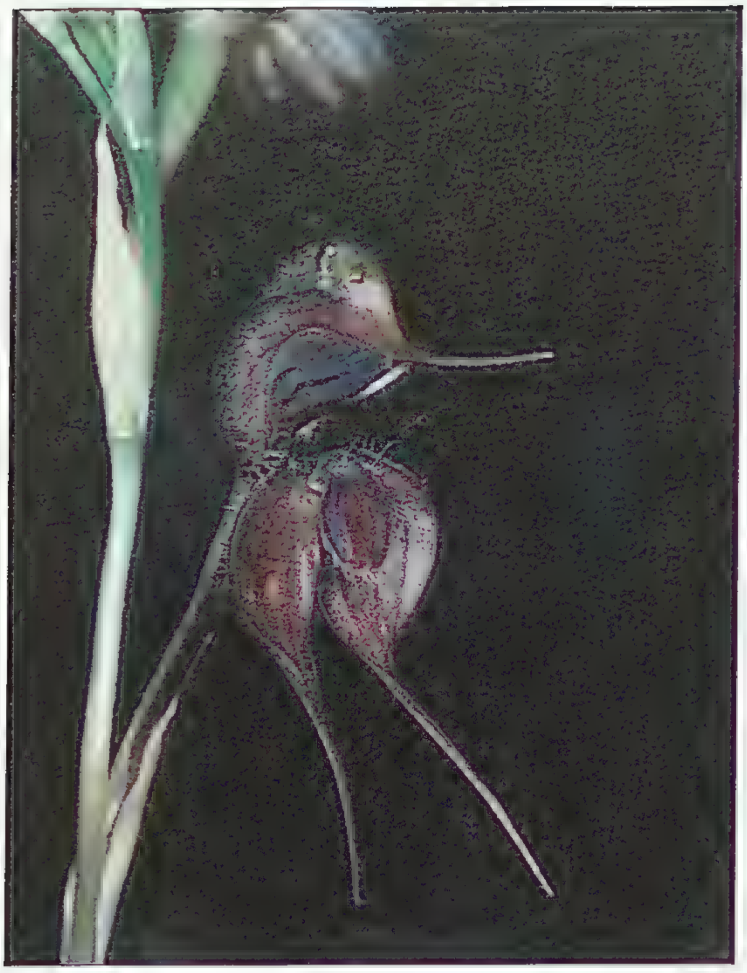
The Orchids of Victoria by Gary Backhouse & Jeffrey Jeanes (1995)
The benchmark for this style of book. All species illustrated, with distribution maps for all taxa.

Field Guide to the Orchids of New South Wales and Victoria by Tony Bishop (1996, 2000)
Now in its second edition which has been revised with the latest nomenclature. Over 500 colour photographs.

Contributions to Tasmanian Orchidology (Australian Orchid Research Vol.3) by David L Jones (1998)
Many new Tasmanian orchids described in this volume. Botanical illustrations and 64 colour photos.

The Orchids of Tasmania by David Jones, Hans Wapstra, Peter Tonelli & Stephen Harris (1999)
Sister volume to *The Orchids of Victoria*. First thorough botanical treatment of Tasmanian orchids.

D.P. Banks
Seven Hills, NSW



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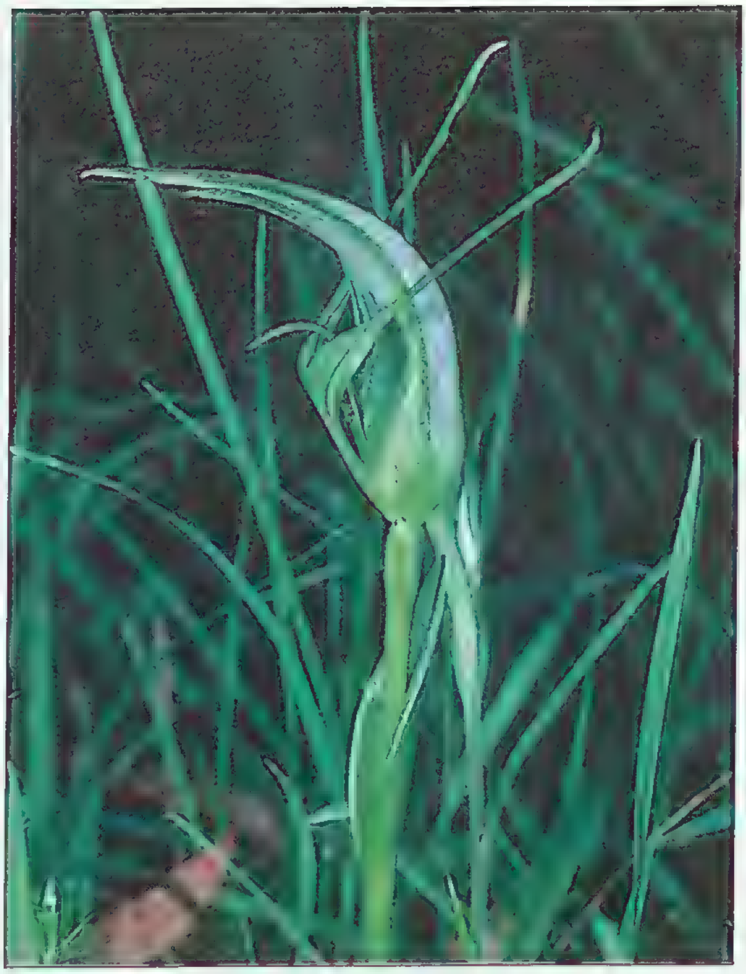
Pterostylis cheraphila
in situ - Dimboola, Victoria



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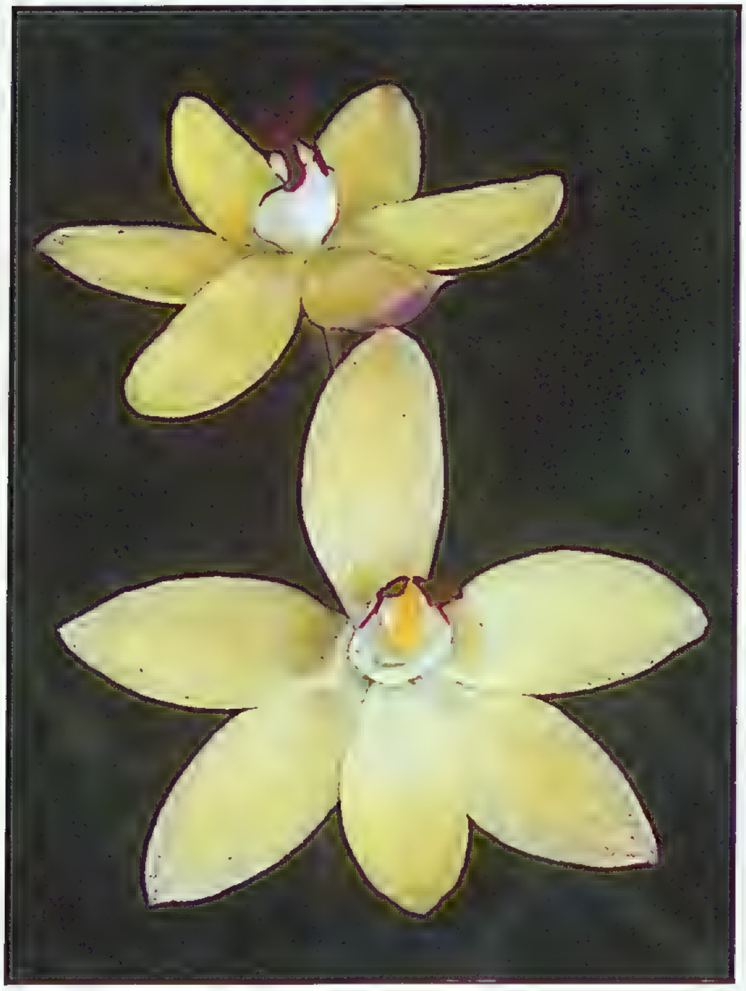
Pterostylis falcata
in situ - Omeo, Victoria



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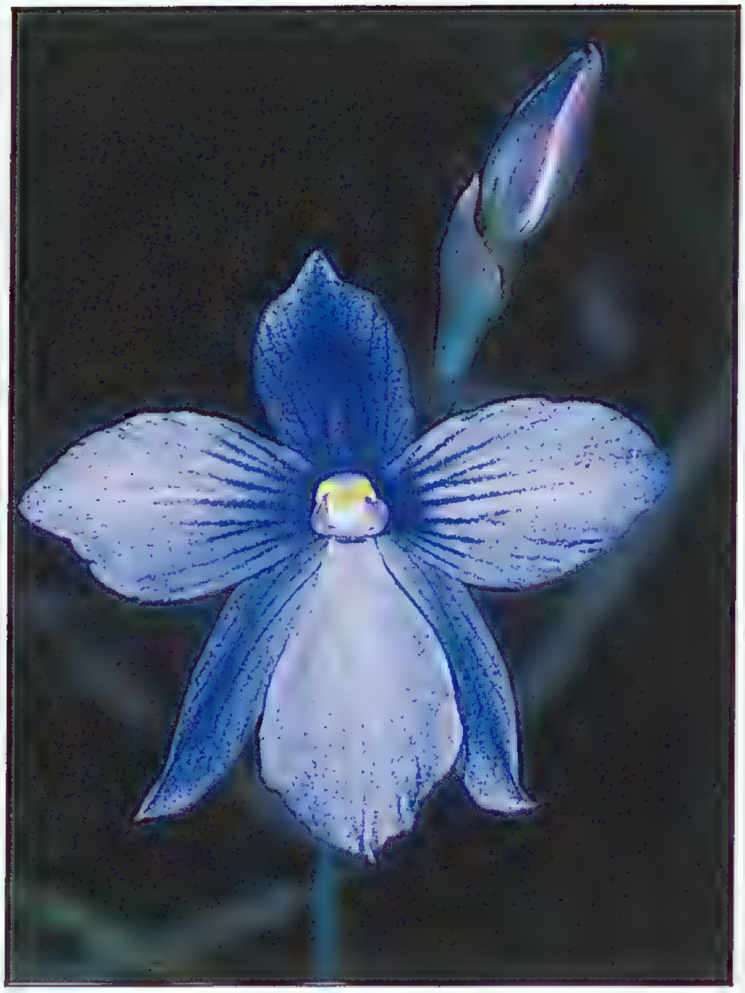
Thelymitra antennifera
in situ – Crib Point, Victoria



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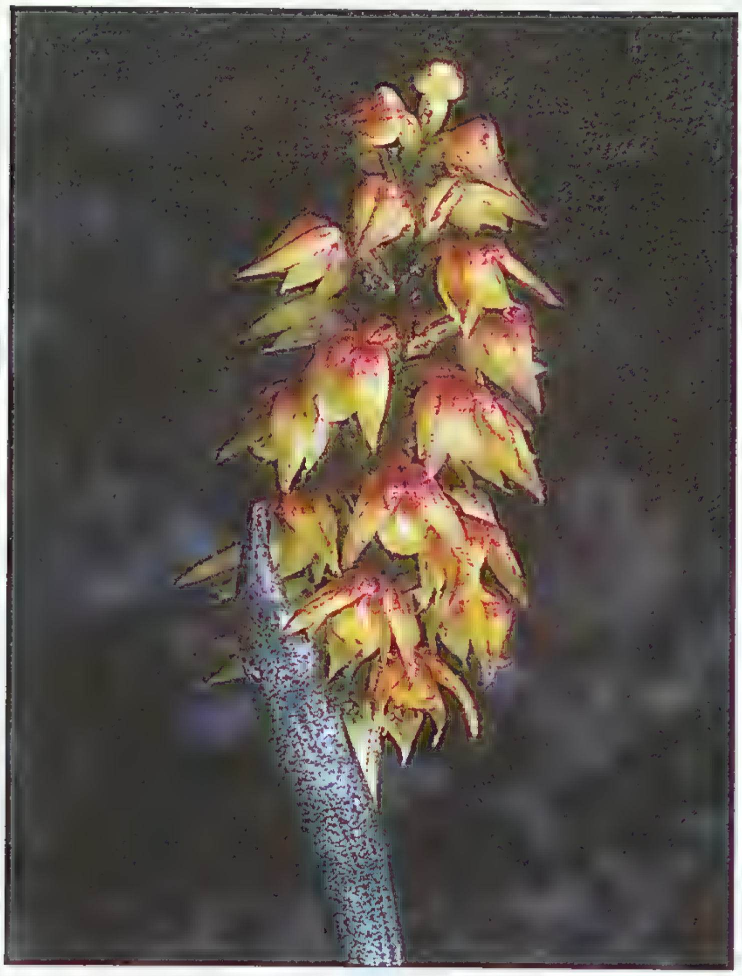
Thelymitra cyanea
in situ – Toorongo Flat, Victoria



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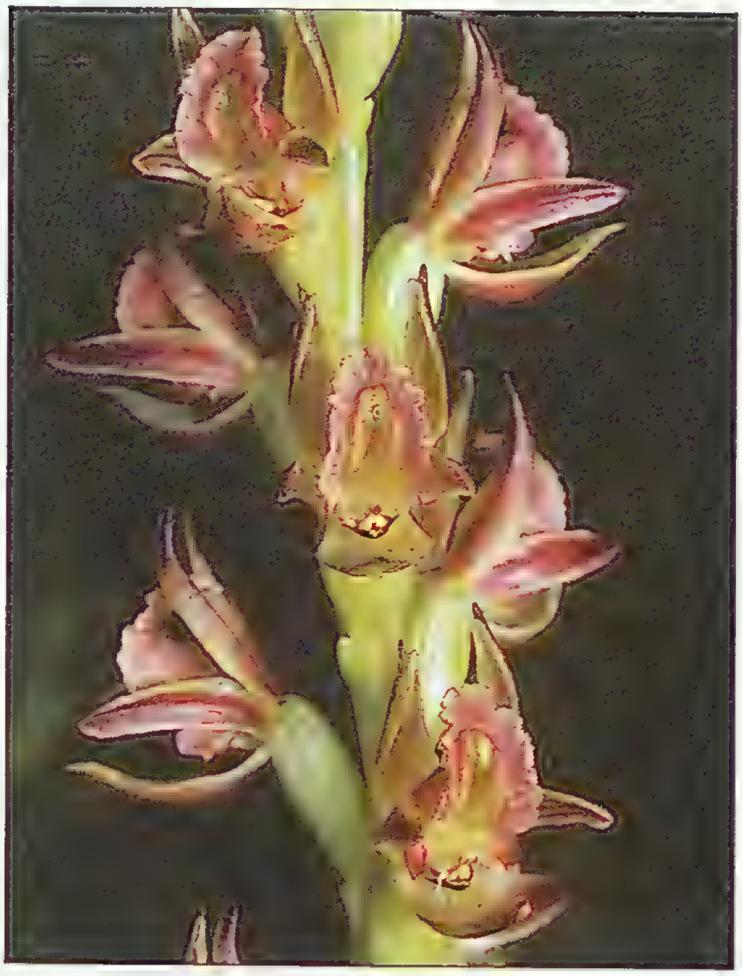
Genoplesium pumilum
in situ - Otways, Victoria



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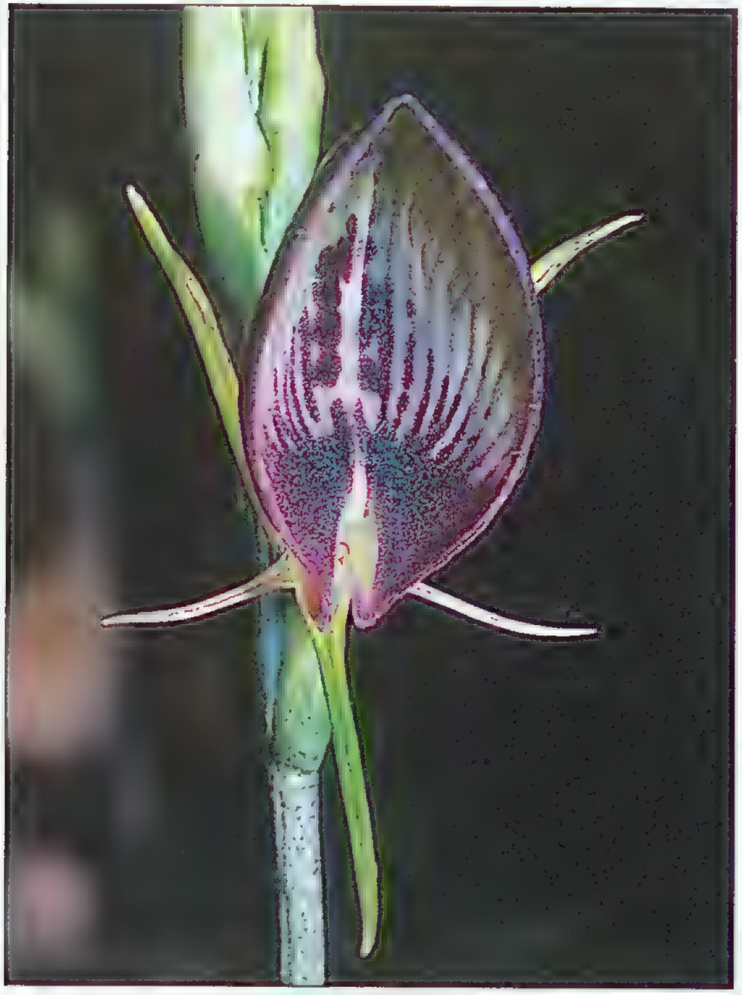
Prasophyllum litorale
in situ - Nelson, Victoria



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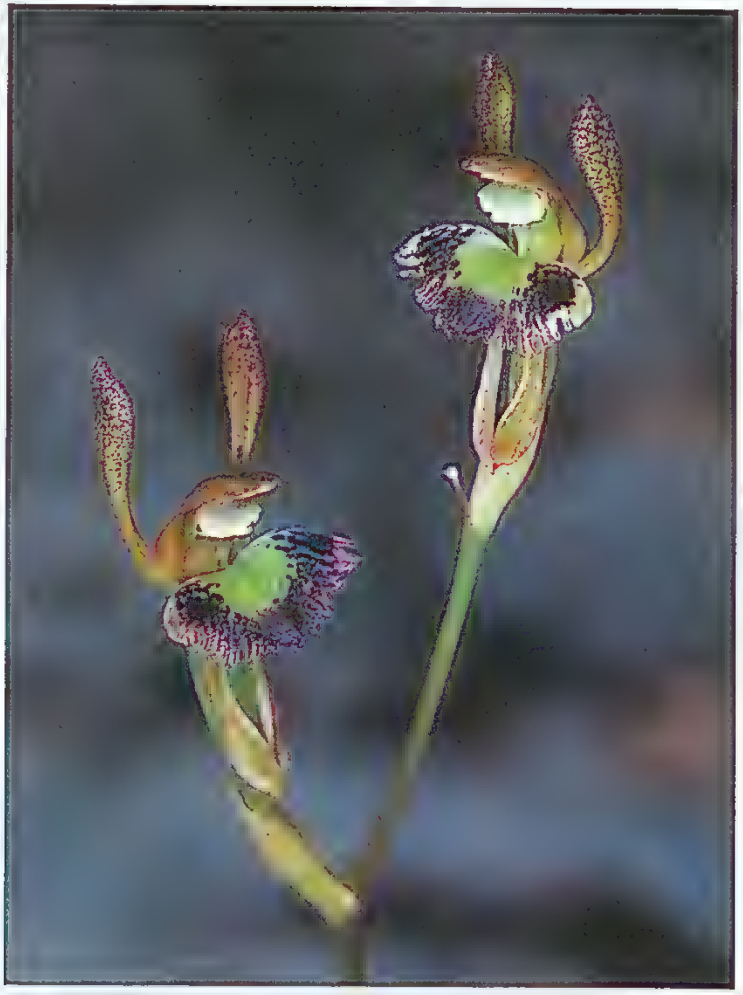
Cryptostylis erecta
in situ - Marlo, Victoria



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Leporella fimbriata
in situ - Grampians, Victoria

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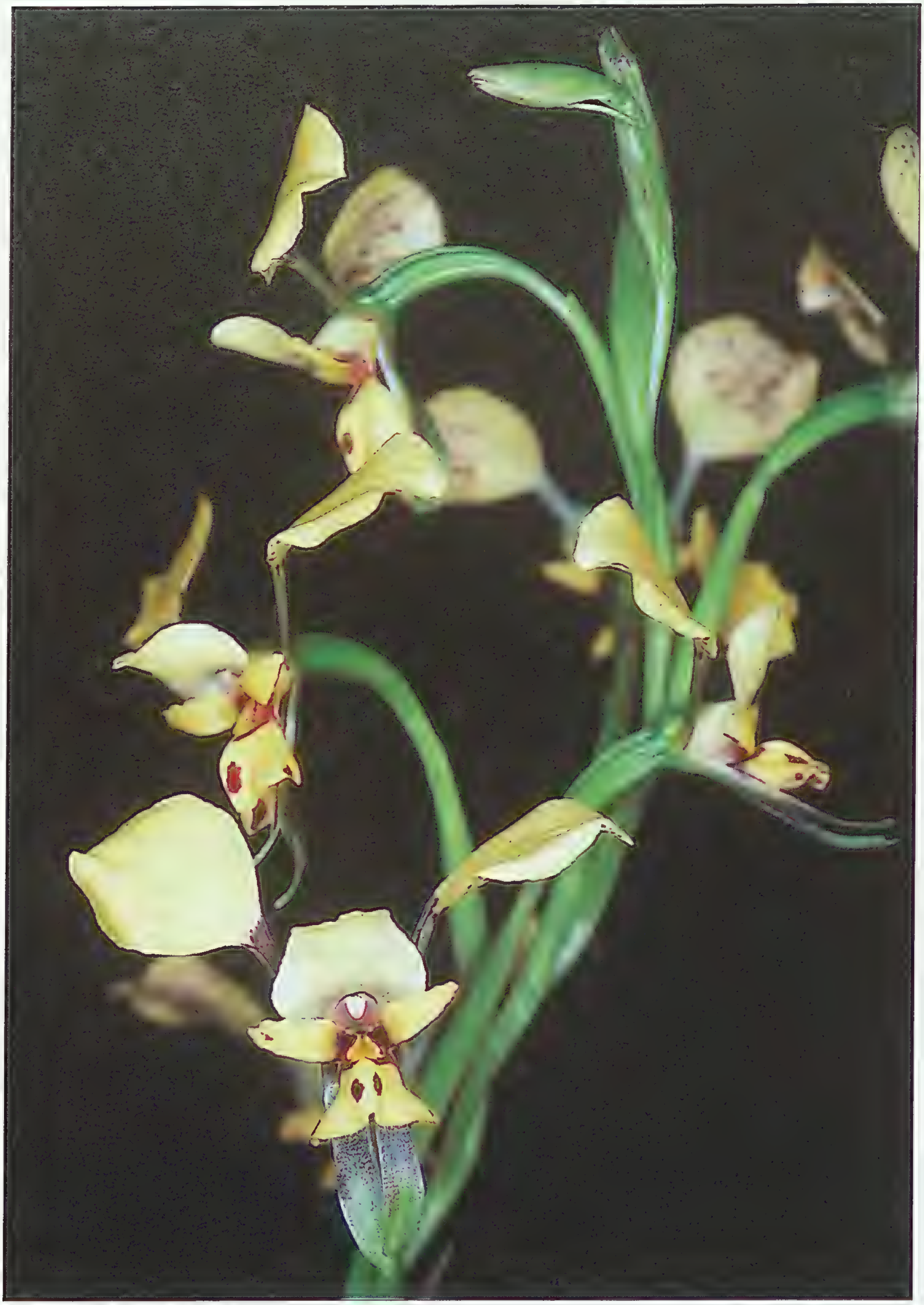

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Diuris bracteata **from Mount White, New South Wales.**

In Search of *Diuris bracteata* Fitzg.

Peter Eygelshoven
76 Taiyul Road, North Narrabeen NSW 2101

In 1998 members from ANOS Warringah Group offered to help the National Parks and Wildlife Service survey and monitor the orchid, *Microtis angusii* D.L. Jones (*The Orchadian* 12(1): 10). Part of the surveying work was to look for new colonies of *Microtis angusii*. To date we haven't found any new colonies in and around Sydney but John Riley found *Microtis angusii* at Sunny Corner a few seasons earlier. In the 1999 season, we found a number of other interesting orchids, one of which may prove to be the elusive *Diuris bracteata*.

I found about ten flowering plants of this orchid at Duffy's Forest, flowering in late August. This was on one of the afternoons when I finished work early and thought I would check out some bushland on the way home (primarily for *Microtis angusii*). At the time I thought they were nothing more than a large or robust flowering of *Diuris maculata*.

I asked Ray Young, a member of both Warringah and Macarthur Groups (which have meetings one night apart), if he would mind taking a flowering stem across to John Riley for him to have a look at. I haven't seen *Diuris maculata* here before and felt I'd better have it confirmed correctly for the records. Ray was only too happy to help. At the time the initial identification was of the *Diuris maculata - platichila* complex, and *Diuris* sp. aff. *platichila* was given to the plant as John Riley had found the same orchid north of Sydney several years earlier.

At the time of my find David Jones, at the National Botanic Gardens, Canberra, was not so sure that Johns' plant could be *Diuris bracteata*, although John himself and Ron Tunstall of Illawarra Group both felt it fell well into the guide lines of *D. bracteata*. When John told David Jones of the Duffy's Forest find, he seemed to think that more work should be done on this orchid and so here begins my search for *Diuris bracteata*. (Or more plants of the orchid I found).

I started to look for information on *D. maculata* and *D. platichila* in all the books I had; *Native Orchids of Australia* by D.L. Jones, *The Orchids of New South Wales* by H.M.R. Rupp, *Australian Orchid Research* Volume 1 by Mark Clements and I borrowed a few books from our Group library including Tony Bishop's book *Field Guide to the Orchids of New South Wales and Victoria*. I also came across a little book made of paper titled *Native Orchids of NSW*. A Mr. Frank Stones of Dee Why compiled it and in this book there was a simple description of *D. platichila* and underneath it *D. bracteata*. This book was donated to ANOS Warringah Group by the late Charlie Taylor.

All these books pretty much ended up saying the same thing. That is, that they all confirm that the stem bracts are over 1 inch long, (25 mm), *Native Orchids of Australia* by D.L. Jones, describes them as "with long, prominent, curved bracts." In *Diuris platichila* the bracts are under 25 mm.

So, as it turns out *D. maculata* was named from Sydney (Port Jackson) by Smith around 1804-1805, hence the original thoughts of it being a large *D. maculata*.

When John first found his plants, just north of the Hawkesbury River – in the Mount White area, he thought that they were *D. platichila* and thought that it was an interesting new site, they are usually found from the Blue Mountains west.

At the time he was more interested in a *Prasophyllum* species growing in the same area and so did not pay a great deal of attention in the *Diuris*. This was in the spring of 1994, after the big Sydney bushfires of January. There were, apparently, hundreds of them! The following year John went back to the area but could only find one plant in flower.

D. platichila was named by R.D. FitzGerald around 1890, the type specimen is from Woodford in the Blue Mountains, hence Johns thoughts of it growing a long way from Woodford. These flowers were at the time identified as *Diuris* sp. aff. *platichila* by David Jones. John could not find these orchids again.

R.D. FitzGerald named *Diuris bracteata* in 1889. It was found by H. Deane at Gladesville, (in Sydney) on the edge of the Parramatta River. It 'apparently' was only seen a couple of times shortly after and therefore is said to be "presumed extinct" by the National Parks and Wildlife as is listed on there Threatened Species List. Schedule 1, Part 4.

There are no collections of these reported sightings to verify the existence of *D. bracteata*, so therefore are not considered accurate and are not recognised.

Tony Bishop in his *Field Guide to the Orchids of New South Wales and Victoria*, feels that the orchid found at Gladesville, is quote "is almost certainly an aberrant plant or a hybrid."

It is hard to believe that this orchid has not been seen since this time. Particularly as there are many enthusiasts looking for orchids throughout the bush in and around Sydney. Perhaps a combination of things has happened. For instance, the fact that this orchid flowers a little earlier in the season, people may have missed it, it may have been simply dismissed as a large *D. maculata*. Maybe it is rare?

My guess is that the orchid John and I found is stimulated into flowering by fire. Also, I'll bet that if there was a bushfire at Gladesville along the Parramatta River in the summer of 1889 (or even a year earlier in 1888), then this orchid may well be *Diuris bracteata.*

If there are any historians out there that can provide me with proof of this, I would be truly grateful. Otherwise, I will have to spend hours looking through old newspapers or books trying to find this information. There is not much bush left around Gladesville these days, so I don't believe that we will find it in its original locality.

At present there are no herbarium specimens, so the only thing we have to go by is FitzGerald's original plates held at the National Botanical Gardens and descriptions found in books (which have arguably been copied from the original reference). I have seen the drawings of *D. bracteata* in Volume 2 Part 4 of FitzGerald's opus, but one really needs to have the flower to compare the floral parts with those in the book. The actual drawing of the plant and flower in his book is quite disappointing, in that there really is no distinct flower, however the plant does give some idea as to what to look for with the much larger bracts and wider leaves. (Sometimes I wish I would pay more attention to these little things and not just go 'ooh ahh' and take the photo).

Well, I now think that I have found out as much as I can about *D. bracteata*, so where to from here?

Over the next few months I will try to get information from the Bushfire Brigade as to where all the bushfires in and around Sydney were in summer 1999/2000. To date there has only been two in my area, Pittwater and Warringah, the weather conditions have prevented controlled burnoffs and bushfires.

These will be the areas I will target when the flowering season starts in August. I'll probably try and get a few adventurers to help do some of the legwork. I'll try to find some *D. platichila* from Woodford, just to satisfy me that they are two different orchids, and continue to collect information on both these taxa.

So if there are any readers that feel they may have some other information that may be of assistance to me I would like to hear from you. I will also try to get to Canberra some time this year, to see the original plates/drawings from FitzGerald.

If the powers that be decide that this orchid is not *Diuris bracteata*, then at least Sydney may have another new species. It may take a few years to work this out, perhaps longer if these orchids are fire stimulated.

In conclusion I have to thank John Riley for his assistance and information on this yellow-flowered donkey orchid.

✿

Genoplesium bishopii (Orchidaceae), a Rare New Species from New South Wales

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Centre for Plant Biodiversity Research,
Australian National Herbarium,
GPO Box 1600, Canberra, A.C.T., Australia, 2601.

Abstract

Genoplesium bishopii, known only from a few small populations in the Gibraltar Range, northern New South Wales, is described as new and compared with *G. sigmoideum* from southeastern Queensland. Notes on habitat and ecology are included.

Key words

Orchidaceae, *Genoplesium bishopii*, *G. sigmoideum*, rare, new species, Australian flora, New South Wales.

Introduction

Genoplesium R.Br. is a predominantly Australian genus of about 50 species, with two species occurring in New Zealand and another in New Caledonia. It is the subject of continuing detailed studies which, it is hoped, will lead to a better understanding of the taxonomy and phylogeny of the genus. Progress has been made with the description of various new species (Jones 1991, 1999, 2000) and a review of Tasmanian species has clarified the taxonomy of the genus in that State (Jones 1998). A further new rare species allied to *G. sigmoideum* is here described as new.

Taxonomy

Genoplesium bishopii D.L.Jones, sp. nov., *G. sigmoideo* D.L.Jones affinis, sed glande petalina minore, multo minus prominenti, et labello majore (3-3.3 mm x 1.2-1.3 mm, cf. 2-2.2mm x 1.2-1.4 mm), oblongo-elliptico, callo angustiore, differt.

Typus

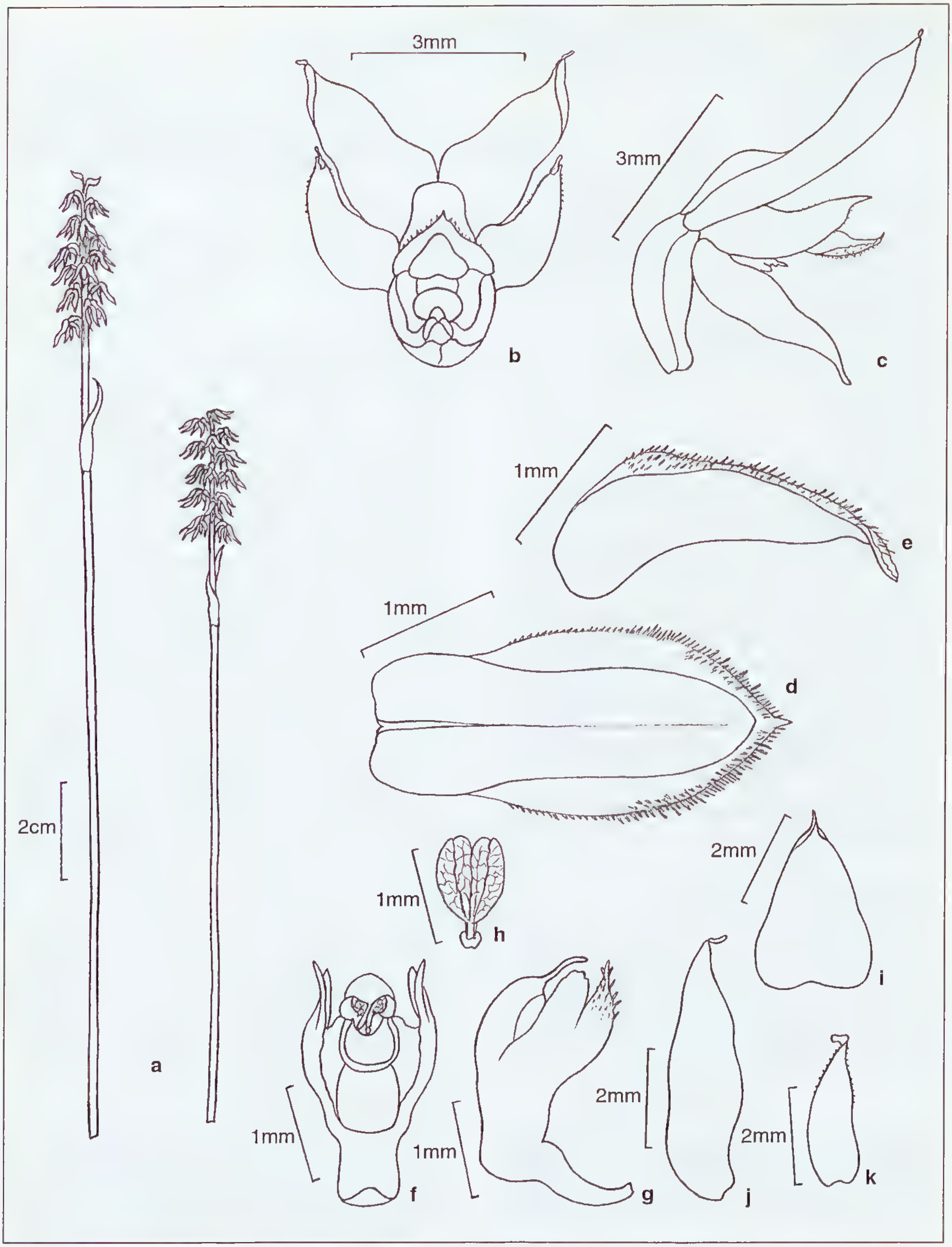
New South Wales, Dandahra Crags walking track, Gibraltar Range National Park, 1 Dec. 1999, *D.L.Jones 17087* & *M.Garratt* (holo CANB; iso NSW).

Genoplesium sigmoideum auct., non D.L.Jones (1991); A. Bishop in G.Harden (ed.) (1993), *Flora of New South Wales* vol. 4: 163.

Illustration

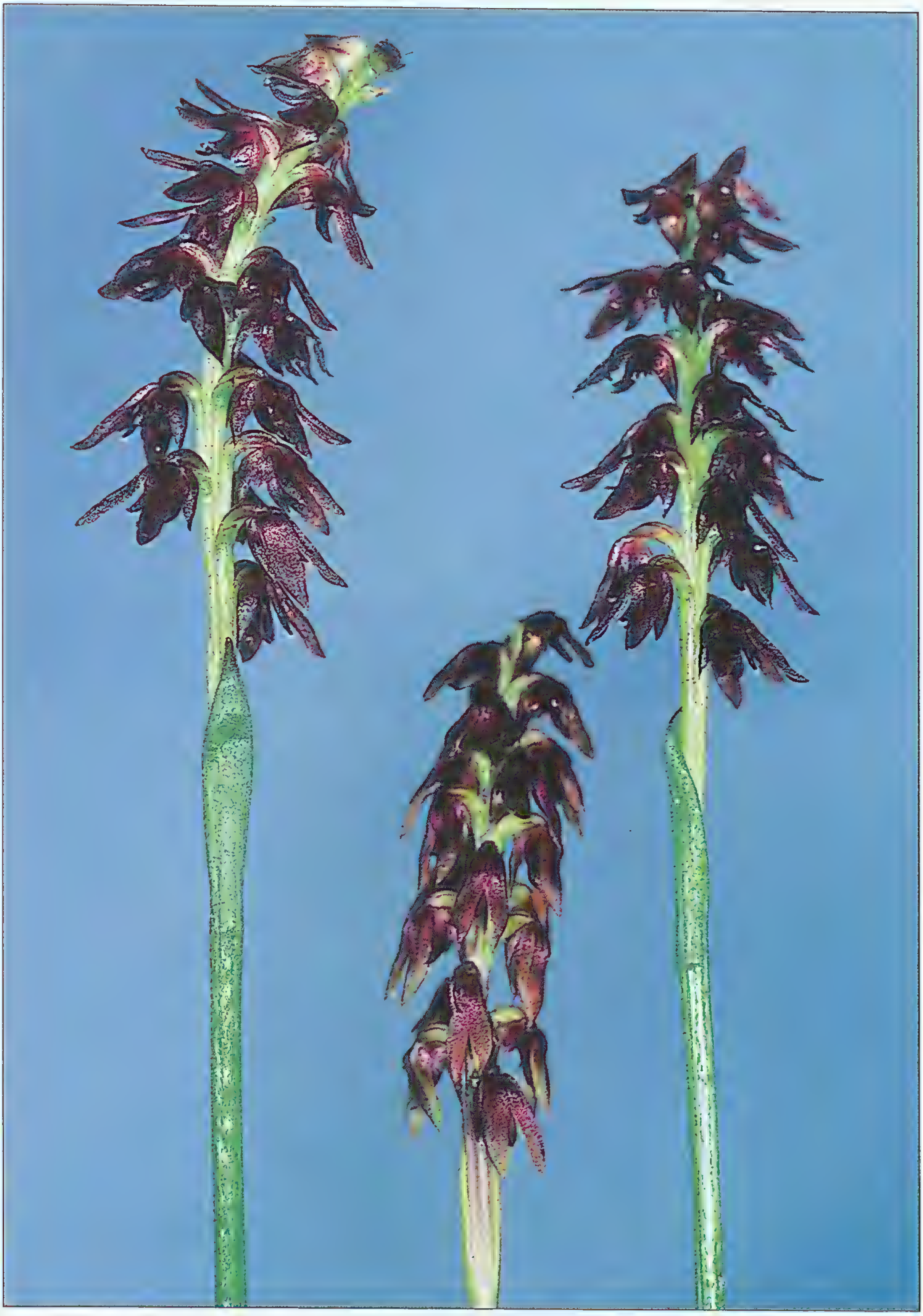
Plate 129, Bishop (1996) - as *Genoplesium* sp. aff. *sigmoideum* (Gibraltar Range).

Terrestrial tuberous *herb*. *Leaf* slender, 14-20 cm long, 0.2-0.3 cm wide, terete, green, reddish at the base; lamina closely sheathing, 10-15 mm long, 2-3 mm wide, subulate, ending c. 5 mm below first flower. *Inflorescence* 20-25 cm tall, bearing 15-30 flowers in a densely crowded spike 3-5 cm long. *Flowers* semi-deflexed, 4-5 mm diam., dark purplish red; scent musty. *Ovary* linear-obovoid, c. 3.5 mm long, slightly curved, green. *Dorsal sepal* cucullate, ovate, 3.5-4 mm long, 1.8-2 mm wide, concave, glabrous, apex long-acuminate to apiculate. *Lateral sepals* obliquely decurved, oblong-lanceolate, 5-5.5 mm long, 1.2-1.4 mm wide, gibbous at the base, widely divergent, thick-textured, margins entire, distal margins incurved, apex subacute, with a vestigial, whitish, terminal gland. *Petals* projected forwards or slightly spreading, asymmetrically narrowly ovate-lanceolate, c. 3.3 mm long, c. 1.1 mm wide, red, glabrous, apex subacute, with a white apical gland. *Labellum* attached by a very short basal claw, hinged, projected forwards or obliquely erect, not recurved; lamina oblong-elliptic, 3-3.3 mm long, 1.2-1.3 mm wide, dark purple, thick and fleshy, the margins densely covered with short cilia of irregular length, apex apiculate. *Callus* occupying most of the ventral surface of the lamina, extending nearly to the labellum apex, dark purple, constricted in the proximal third, thickest and broadest just above base then gradually tapered to the apex, densely covered with siliceous, ellipsoid colluviae. *Column* erect, c. 1.8 mm long, c. 1.2 mm wide, dark red. *Column foot* ligulate, c. 0.7 mm long, slightly curved. *Column wings* notched for about one third their length, the lobes divergent; posterior lobe linear-deltate, pale, emarginate; anterior lobe acuminate, curved, dark red, denticulate. *Anther* c. 1.2 mm long, with a filiform rostrum c. 0.7 mm long. *Stigma* elliptic, c. 0.5 mm long, c. 0.5 mm wide. *Pollinarium* c. 1.2 mm long; pollinia c. 0.8 mm long, yellow, coarsely granular; caudicle ligulate, c. 0.1 mm long; viscidium c. 0.2 mm wide. *Capsules* not seen. **Fig. 1.**



Genoplesium bishopii, **Gibraltar Range – New South Wales.**

(*D.L. Jones 17087 & M. Garratt*) drawn from the type collection, **Fig. 1.**
a. plants; **b**. flower from front; **c**. flower from side; **d**. labellum from above, flattened out;
e. labellum from side; **f**. column from front; **g**. column from side;
h. pollinarium; **i**. dorsal sepal; **j**. lateral sepal; **k**. petal.
Drawing 4/12/1999 by D.L. Jones. ©



M.A. Clements

Genoplesium bishopii from the Gibraltar Range - New South Wales.

Distribution and Ecology

Endemic in north-eastern New South Wales where known from only a few sites in Gibraltar Range National Park. The species occurs sporadically in open patches in heathy forest and on the margins of swamps. It also colonises disturbed sites such as mown strips, tracks and road verges. The soils are grey gravelly loams with prominent surface accumulations of white gravel.
Altitude: c. 900 m.
Flowering Period: November to January.

Recognition

Recognised by its summer flowering habit; dark purplish-red semi-deflexed flowers; glabrous sepals and petals, the latter with a small white apical gland; thick and fleshy, elliptic-oblong labellum with irregular short marginal cilia; and, a narrow labellum callus.

Affinities

Genoplesium bishopii shares many similarities with *G. sigmoideum* and the two appear to be closely allied. Both species are summer flowering, narrow endemics growing at moderate altitudes in the ranges and have flowers of a similar dark red to dark purple colouration with irregular short trichomes on the labellum margins. *Genoplesium sigmoideum* is known only from the Dave's Creek area in Lamington National Park, south-eastern Queensland, where it grows on rock ledges and among low heath in shallow yellow-brown gravelly loam at about 800 m altitude.

Genoplesium bishopii is the taller growing of the two species and has larger flowers (4-5 mm diam., cf. 3.5-4 mm) with a larger, (3-3.3 mm x 1.2-1.3 mm cf. 2-2.2 mm x 1.2-1.4 mm), oblong-elliptic labellum (elliptic-obovate in *G. sigmoideum*) with a narrower callus. *Genoplesium sigmoideum* can be immediately distinguished by the large white sigmoid gland on the apex of the petals. This prominent structure is readily visible even without the aid of a hand lens. By contrast the petaline gland on *G. bishopii* is quite small and much less prominent. A drawing (**Fig. 2**) of *G. sigmoideum* is included for comparison.

Notes

Tony Bishop discovered this species while bushwalking in the Gibraltar Range district of northern New South Wales. To date it is known only from scattered small groups and no substantial populations of the species have been located. The flowers release an unpleasant musty scent on warm days.

Conservation Status

Scattered in small groups but conserved in Gibraltar Range National Park. Suggest 2RC by criteria of Briggs & Leigh (1996).

Etymology

Named after Tony Bishop (1954-1995), botanist, journalist and photographer who took an active interest in the orchids of south-eastern Australia, which culminated in the production of the book *Field Guide to the Orchids of New South Wales and Victoria*, now in its second edition.

Acknowledgements

I thank Barbara Jones for company in the field and Marion Garratt and Karina FitzGerald for technical assistance. Lachlan Copeland supplied additional locality details and Alex George furnished the Latin diagnosis.

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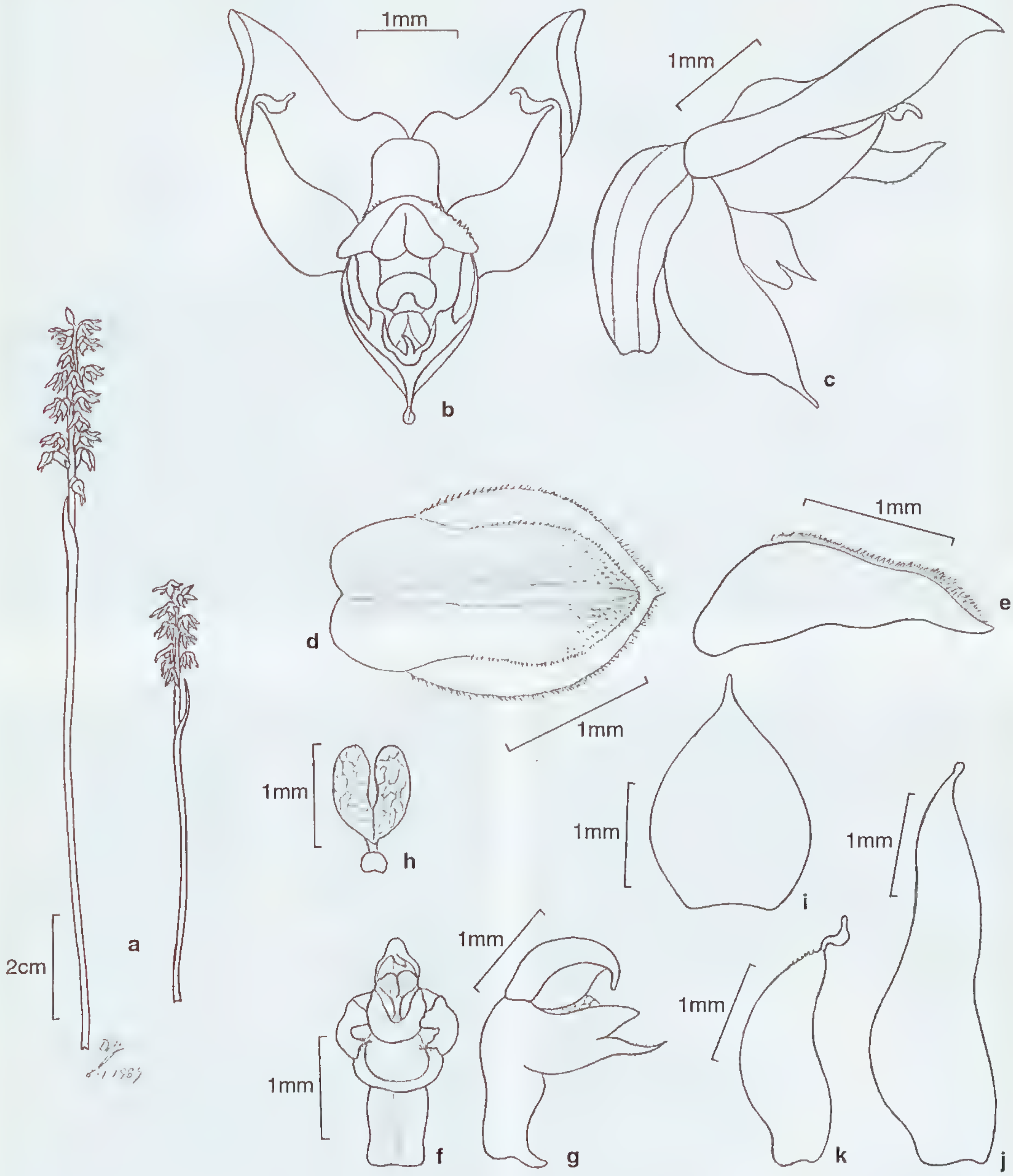
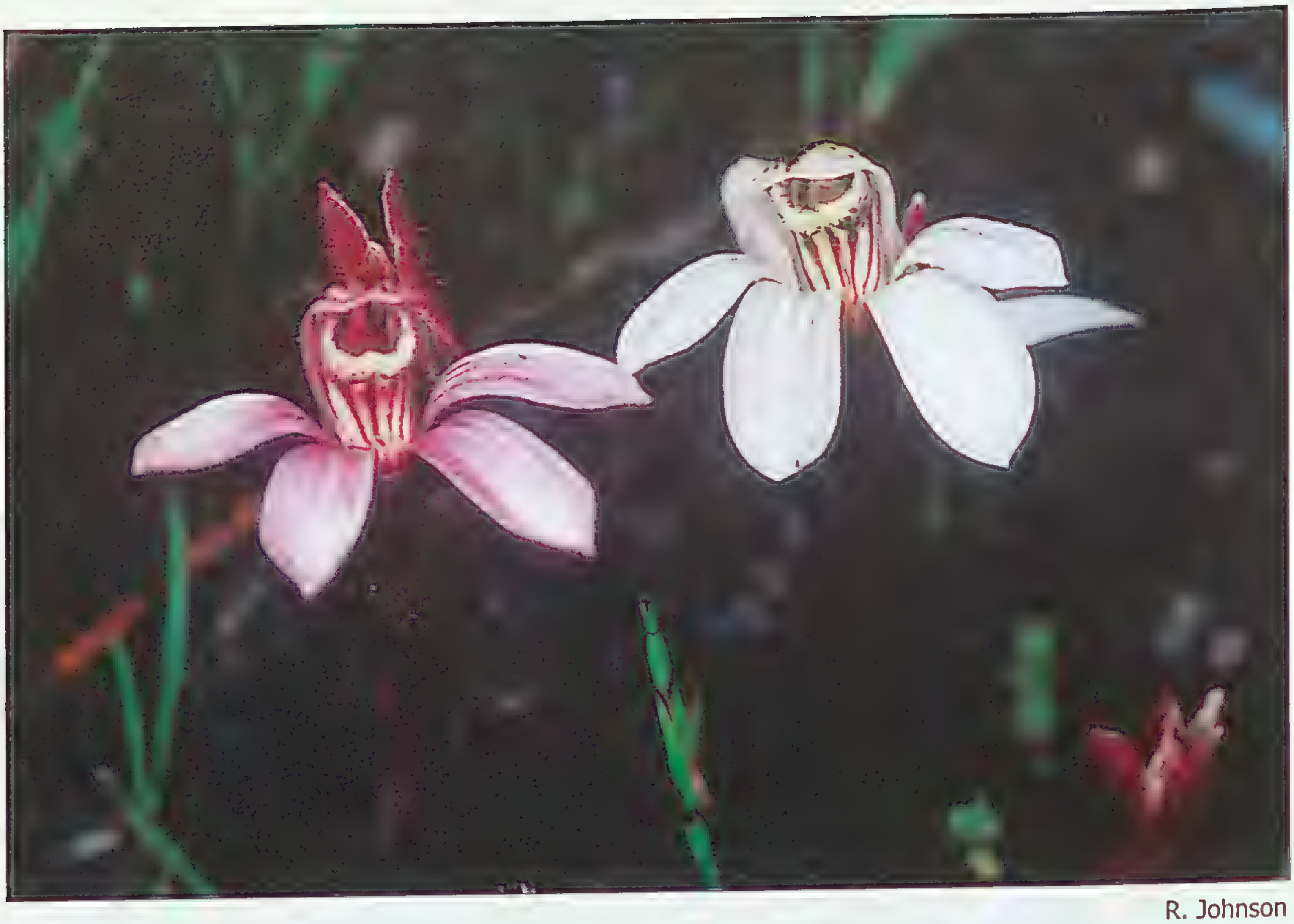


***Genoplesium sigmoideum*, Dave's Creek, - Queensland.**

(*D.L. Jones s.n.*) **Fig. 2.**

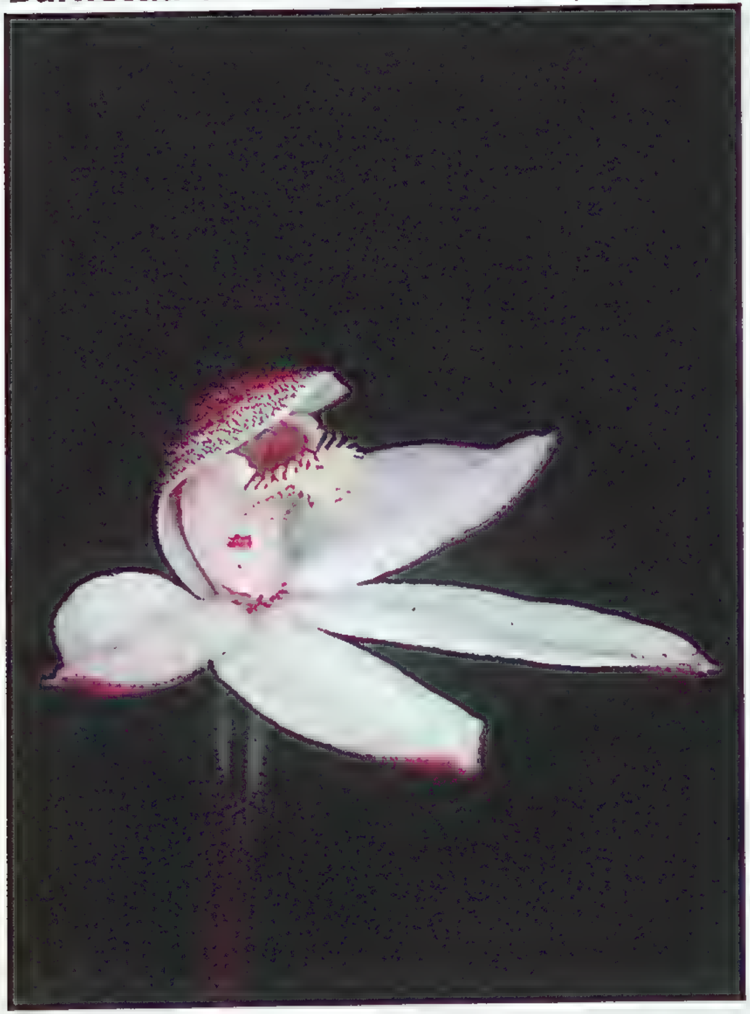
a. plants; **b**. flower from front; **c**. flower from side; **d**. labellum from above, flattened out; **e**. labellum from side; **f**. column from front; **g**. column from side; **h**. pollinarium; **i**. dorsal sepal; **j**. lateral sepal; **k**. petal.

Drawing 8/1/1989 by D.L. Jones. ©



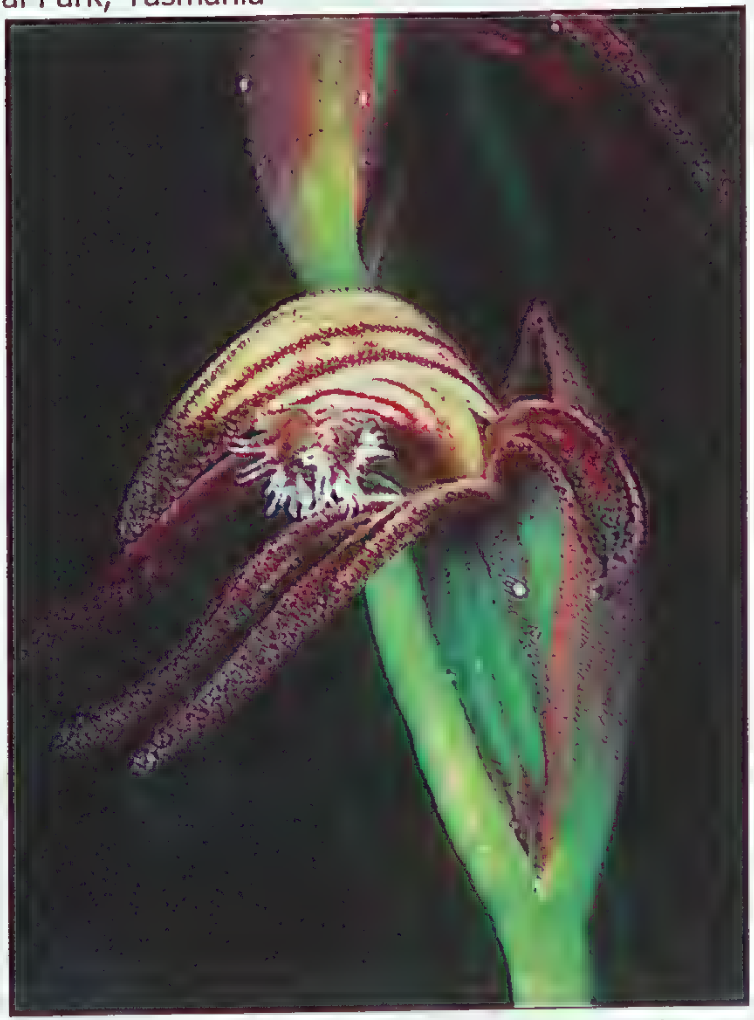
R. Johnson

Burnettia cuneata *in situ* Rocky Cape National Park, Tasmania



R. Johnson

Caladenia cracens
in situ Rocky Cape National Park, Tasmania



R. Johnson

Pyrorchis nigricans
in situ Rocky Cape National Park, Tasmania

Tasmania's Rocky Cape National Park

Barry Dudman,
9A Simpson St., Somerset TAS 7322

This 3000-hectare national park is situated on the northwest coast of Tasmania, a little to the west of Burnie. It is an orchid enthusiasts paradise, with over 50 species recorded and with a keen eyen one can find an orchid in flower any day of the year. Seasonal conditions of course effect flowering times and springtime (September – December) see the most number of flowers.

The park has a twelve kilometre sandy beach and rocky coastline from just west of Boat Harbour to the headland of Rocky Cape, and is bordered on the southern side by basalt farmlands. The area was declared a National Park in June 1967, with an extension to the east in 1975. The early explorers, Bass and Flinders, named Rocky Cape in 1798.

In 1928 a land surveyor named Fossey opened a cattle track along the crest of the hills linking their Emu Bay and Circular Headland holdings. This course subsequently became the mailman's route by horseback and on foot until about 1894. Some parts of the track are still usable whilst searching for orchids.

Aboriginal habitation can be observed by the remains of middens (piles of old shells from shellfish), especially in and near the caves and rock shelters at both ends of the park. Researches have dated these back some 8000 years.

The main rock type and soil is quartzite and vegetation is dominated by low heathland on coastal plains and hill slopes. The eastern end Sisters Beach is the only area in Tasmania where *Banksia serrata* (Old Man Banksia) grows. These magnificent old trees are a haven for native birds, especially our honeyeaters, while they are in bloom. The coastal strip contains many species that are endemic to Tasmania and are able to withstand the strong salt-laden winds off Bass Strait.

Rocky Cape National Park is subject to fairly frequent small fires and these are usually quickly controlled. But in March 1998, a campfire got out of control at the western end of the park. This was fanned by strong winds, burning over 80% of the park before being contained at the eastern end. Only the small settlement of Sisters Beach was left unscathed.

The type specimens of several of Tasmania's unique plants come from Rocky Cape. The prominent early Tasmanian botanist, Ronald Campbell Gunn, had some species named after him. He was police magistrate at Circular Head in the 1830's.

There are numerous walking tracks in the park from half hour to three hour, both overland and along the beaches and rocks. I have shown Rex Johnson some of these and on his photographic expeditions came home very black and dirty after fossicking amongst the burnt bushes.

We witnessed an impressive display of thousands of *Pyrorchis nigricans* (Red Beaks) blooming in October 1998, after the March fire. Then in another wet area there was a carpet of *Burnettia cuneata* amongst the tall stems of *Prasophyllum*. On another walk, right on the side of the track of Anniversary Point, we found colonies of the Duck Orchids, *Caleana major* and *Caleana minor*. Rex had a lot of difficulty photographing them as they swayed in the wind.

A recent visit to the park shows the hillside taking on a green tinge. A close inspection revealed a carpet of seedlings and regrowth from the burnt stems and lignotubers.

We saw numerous leaves of the greenhoods, *Pterostylis parviflora* and *Pterostylis pedoglossa*, the helmet orchid – *Corybas aconitiflorus* with the endemic *Genoplesium brachystachyum* coming into flower.

We live in anticipation for what spring of 2000 will reveal. I am sure that we will be able to locate some treasures for visitors to the 15th Australian Orchid Conference in Burnie, during October 2000.

I am fortunate that it is only half an hour drive from my home to either end of the park. One day in October, before the fires, I found over twenty orchid species in flower.

Orchid genera I have recorded from the Rocky Cape National Park are;

- ***Acianthus***
- ***Burnettia***
- ***Caladenia***
- ***Caleana***
- ***Corybas***
- ***Chiloglottis***
- ***Calochilus***
- ***Cryptostylis***
- ***Cyrtostylis***
- ***Dipodium***
- ***Diuris***
- ***Eriochilus***
- ***Gastrodia***
- ***Glossodia***
- ***Genoplesium***
- ***Microtis***
- ***Prasophyllum***
- ***Pterostylis***
- ***Pyrorchis***
- ***Thelymitra***

For more information on Tasmanian orchids, I recommend *Australian Orchid Research* Volume 3 (1998) – Contributions to Tasmanian Orchidology, by David L. Jones. This is published and distributed by the Australian Orchid Foundation. Late in 1999, *The Orchids of Tasmania* (by David Jones, Hans Wapstra, Peter Tonelli and Stephen Harris) was released.

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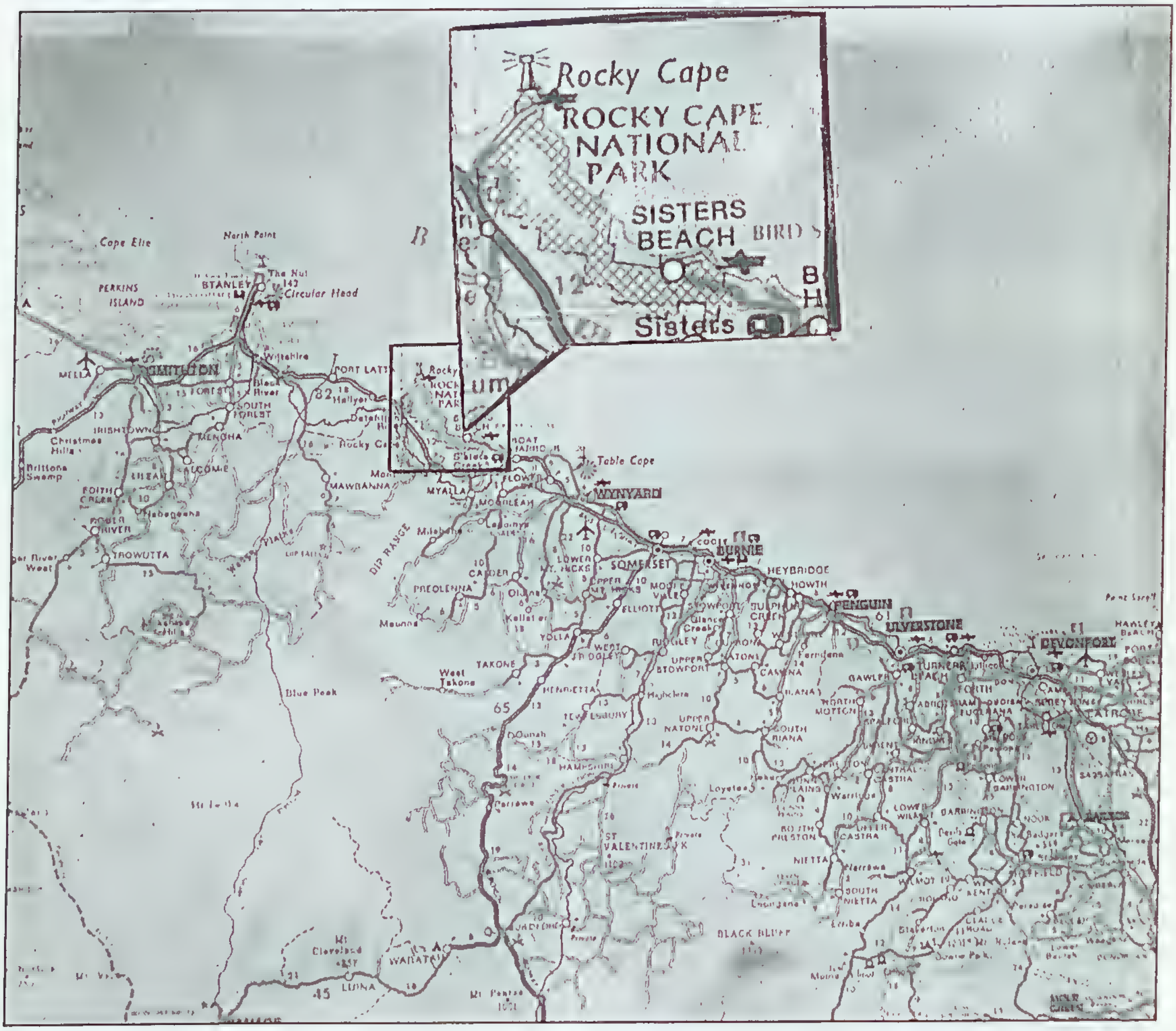

Map of Northeastern Tasmania

Letters to the Editor

Dear Editor,

I would be most grateful if you would consider printing the attached statement in your orchid journal regarding the recent book *Orchid Fever* by Eric Hansen.

We are deeply concerned about a number of the statements in the book that reflect poorly on the reputation of The Royal Botanic Gardens and several of our staff. We are also concerned about the potential effect of the book on the public perception of the importance of CITES.

It would be inappropriate to present a long and detailed rebuttal of the accusations in the book in your publication. But we nevertheless believe that it may be of interest to your readers to have a sense of position of The Royal Botanic Gardens, Kew in respect of these serious allegations.

Thank you for your consideration in this request.

Sincerely

Prof. Peter R Crane FRS
Director
Royal Botanic Gardens, Kew, UK
7 June 2000

Orchid Fever Allegations Rejected by Kew

The Royal Botanic Gardens, Kew rejects claims in Eric Hansen's book *Orchid Fever* that the organisation and members of its staff circumvented international conventions relating to the import of endangered plants in 1985. The book contains a number of misleading comments, opinions and serious errors with regard to RBG Kew and CITES which we have taken up with the publishers.

The essence of the allegations, that Kew knowingly or negligently received plants smuggled into the UK by Henry Azadehdel, who was subsequently convicted for the smuggling of endangered species, is denied.

The facts are that, when Azadehdel originally contacted Kew claiming to be a keen orchid grower, there were no initial grounds for concern. However, in August 1985 as soon as suspicions were raised that he might be smuggling orchids, Kew placed the matter in the hands of the proper authorities and Henry Azadehdel was arrested at Heathrow Airport in late 1987. He pleaded guilty and was convicted in 1989 at the Old Bailey, receiving a prison sentence and fine. He subsequently appealed and his sentence was reduced by the Appeal Court because of his financial state and the Court's view that his offence was less serious than the smuggling of ivory or rhino horn from dead animals. These facts are clearly corroborated in the written judgement on appeal.

Kew is very active in supporting CITES (Convention on International Trade in Endangered Species) and is a source of expert witnesses in inspection of material stopped by HM Customs and Excise. Without such experts, CITES and the national enforcement agencies could not function. Kew does not issue CITES permits and never has done.

Assisting with conservation initiatives and encouraging the sustainable use of natural resources is an important part of the mission of the Royal Botanic Gardens, Kew. In this regard we think that the book is misleading to readers in that the author fails to draw any distinction between the scientific collection of a handful of plants for study under the appropriate permits, and the wholesale extraction of hundreds or thousands of plants for economic gain by smugglers - a process which has significantly reduced the wild population of some orchid species.

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Natural Hybrid - *Caladenia caerulea* x *Glossodia minor*

Margaret Bradhurst
6 North East Crescent, Lilli Pilli, NSW 2229

August is the time of the year when I spend a lot of time on my hands and knees examining the labellums of *Caladenia caerulea* and *Glossodia minor*. It all started in 1997 when I was looking for a good specimen of *Caladenia caerulea* to photograph and I came across one that I thought looked a little 'different'. On further investigation I discovered several others and after taking details, measurements etc. I headed home to see what the reference books had to say.

It soon became obvious that I had found a natural intergeneric hybrid between *Caladenia caerulea* and *Glossodia minor*, and after confirmation of its identity from the Herbarium in Sydney and in Canberra, I began my annual 'hybrid watch'.

I took an annual count of the hybrids and their parent plants over the same given area, which measured 500 square metres. I also photographed the hybrids each year, as there was quite a variation in flower size, colour and detail in the different specimens. Basically, the hybrid takes the flower shape from the *Glossodia* and the labellum from the *Caladenia.* The labellum almost always has a noticeable white tip. Sometimes this tip has two rows of tiny pale lemon calli, which give it a yellowish look. The leaf resembles that of *Caladenia caerulea.*

The pair of notched black basal labellum calli, which are present on *Glossodia minor*, are present in the hybrid, but vary slightly in shape and number. The two rows of yellow calli down the middle of the labellum of *Caladenia caerulea* are sometimes present on the hybrid, but more often the calli are dark brown/black and are in a single row or unevenly dotted on the labellum. There are transverse purple bands on the labellum in most of the specimens.

1997: (23rd August)
  30-40 *Caladenia caerulea,*
  150-200 *Glossodia minor*
  4 hybrids - colour light blue/purple

1998: (13th August)
  80 *Caladenia caerulea,*
  20 *Glossodia minor*
  5 hybrids - colour dark purple

Then followed three days of heavy rain and when I returned to the site, the area was waterlogged and most plants were lying sodden on the ground, petals stuck together. The glossodias appeared to have stood the drenching a little better than the caladenias.

1998: (23rd August)
  20-30 *Caladenia caerulea ,*
  approx. 200 *Glossodia minor*
  1 hybrid - colour light blue/purple

1999: (4th August)
  61 *Caladenia caerulea,*
  124 *Glossodia minor*
  2 hybrids - colour dark purple

After a mild damp winter the flowering season started off early and well. However, returning to the site a week later I was disappointed to find that the hybrids had disappeared without trace. On my next visit three days later, I could not believe my eyes when I noticed that all the *Caladenia caerulea* had also disappeared without trace, except for 7 or 8 in the shrubbery at the edge of the site. *Glossodia minor* was still flowering well.

A few days later I again visited the site. There was no change, but on this occasion I noticed a flattened area at the edge of the site with wallaby droppings nearby. On the next visit, deer footprints were found. So, I think I have found the culprits responsible for the disappearance of the flowering *Caladenia caerulea* and the hybrids, but why didn't they eat the *Glossodia* ?

I don't know what the future will be for the hybrid, as long as the parents remain in large numbers and the wallabies and deer choose to dine somewhere else, there is hope!

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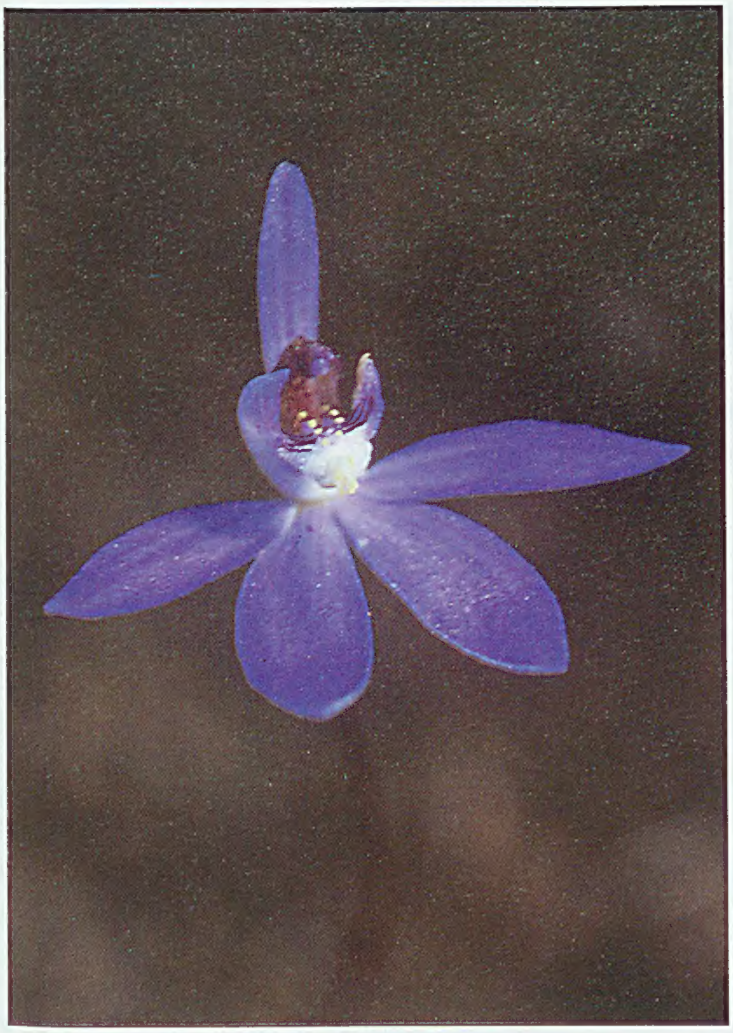
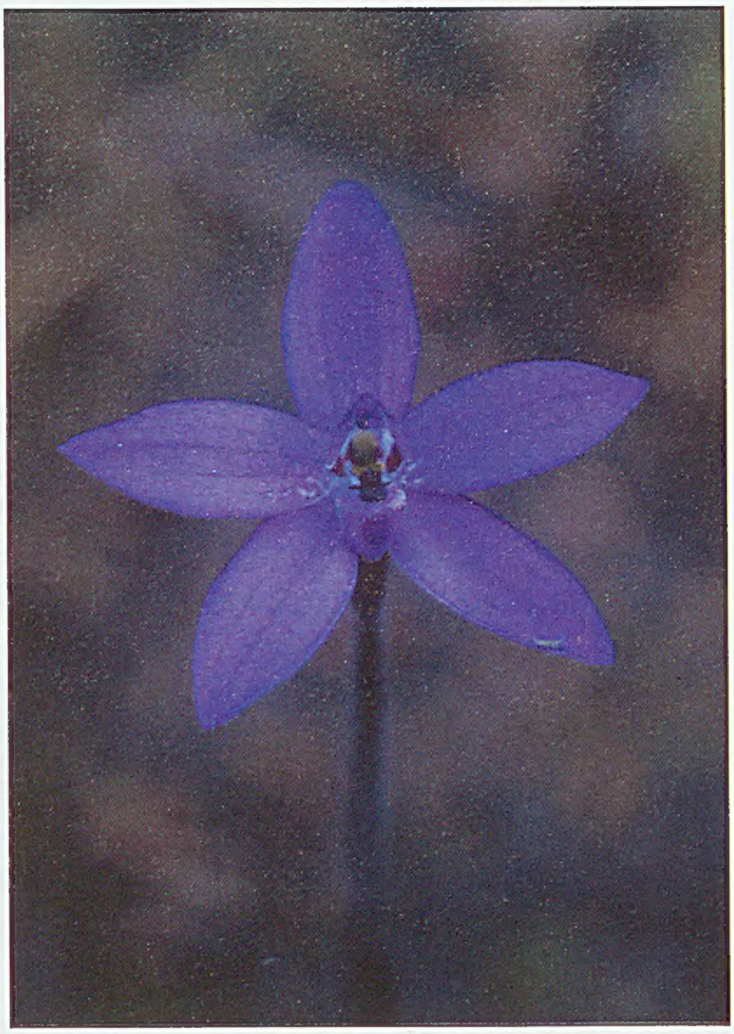


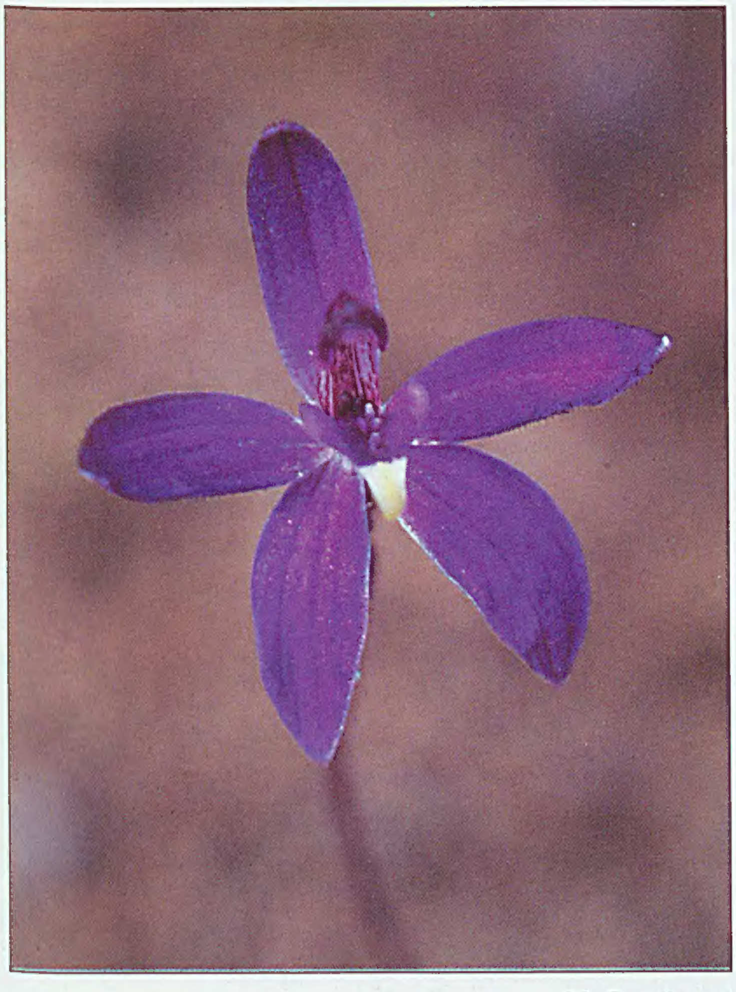
M. Bradhurst

Caladenia caerulea



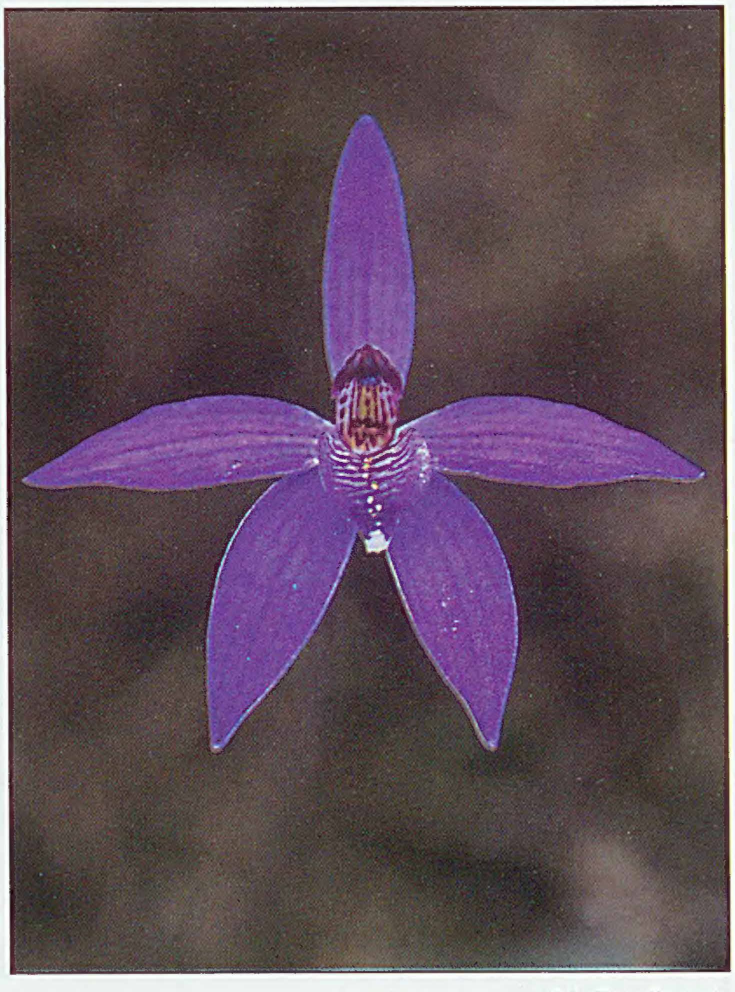
M. Bradhurst

Glossodia minor



M. Bradhurst

Calda. caerulea x Glossodia minor
Natural hybrid (14/8/98)



M. Bradhurst

Calda. caerulea x Glossodia minor
Natural hybrid (21/8/97)

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ANOS Sydney, 4 Regal Ave., Kings Langley 2147. ☎(02) 9624-1768. Meetings 8pm, 3rd Fri. each month. Senior Citizens Hall, Baulkham Hills Community Centre (off Conie Ave.) Baulkham Hills.

ANOS Warringah, P.O. Box 421 Forestville 2087. ☎(02) 9416-4306. Meetings 8pm, 3rd Tue. each month. Community Hall, Starkey St., Forestville.

QUEENSLAND

ANOS Kabi, P.O. Box 424 Aspley 4034. Meetings 7.30pm, 2nd Tue. each month (except Jan.). Bald Hills Memorial Hall, Gympie Rd., Bald Hills.

ANOS Logan, P.O. Box 2103 Crestmead 4132. Meetings 8pm, 2nd Wed. each month. Logan City Works Depot, Cnr. Kingston & Smith Sts., Woodridge.

ANOS Mackay & Dist., 98 Belford Rd., Andergrove. ☎(07) 4955-1631. Meetings 8pm, 2nd Thur. each month. Andergrove Neighbourhood Centre, Belford Rd., Mackay.

ANOS Townsville, P.O. Box 1147 Aitkenvale 4814. ☎(07) 4778-4311. Meetings 8pm, 1st Tue. each month. Townsville Orchid Society Hall, Pioneer Park (opp. Willows Shopping Centre), Thuringowa.

ANOS Wide Bay, P.O. Box 15 Tinana 4650. ☎(07) 4122-1251. Meetings 7.30pm, 4th Wed. each month (except Dec.). Swimming Club Hall, Burrum St., Howard.

Native Orchid Society of Toowoomba, P.O. Box 2141 Toowoomba 4350. Meetings 7.30pm, 1st Fri. each month. Red Cross Hall, Hall Lane (off Neil St.) Toowoomba.

VICTORIA

ANOS Geelong, 1 Elizabeth St., Belmont 3216. ☎(03) 5243-4286. Meetings 8pm, 2nd Wed. each month. Uniting Church Hall, Regent St., Belmont.

ANOS Victoria, P.O. Box 2685 Cheltenham 3192. ☎(03) 9954-7692. Meetings 8pm, 1st Fri. each month. Demonstration Hall, Burnley Horticultural College, Swan St., Burnley.

SOUTH AUSTRALIA

Native Orchid Society of South Australia, P.O. Box 565 Unley 5061. ☎(08) 8356-7356. Meetings 8pm, 4th Tue. each month. St. Matthews Hall, 67 Bridge St., Kensington.

WESTERN AUSTRALIA

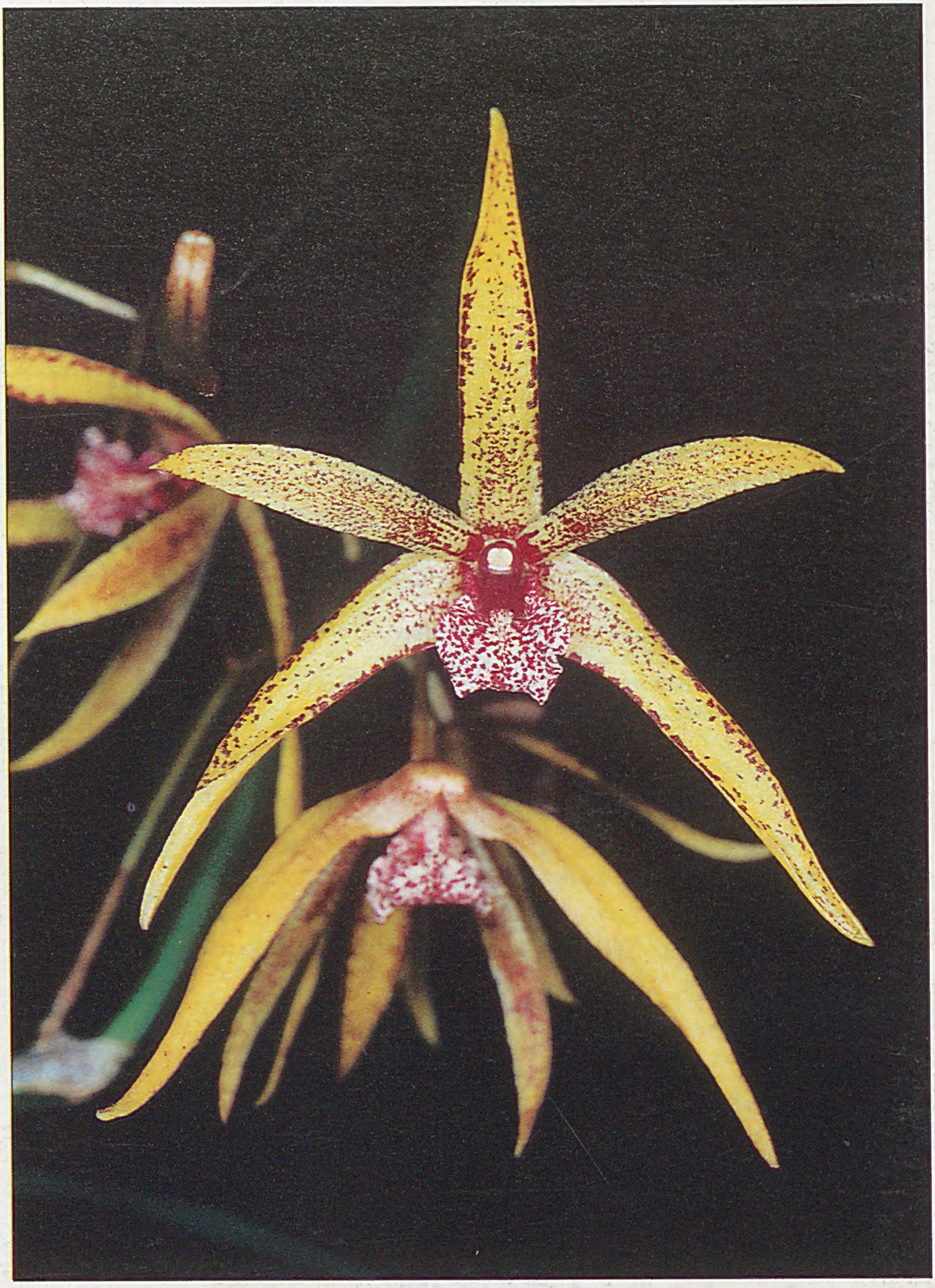
ANOS Western Australia, 95A Ewen St., Scarborough 6019. ☎(08) 9341-6709. Meetings 8pm, 2nd Mon. each month. Wilson Community Hall, Brailbrise Rd., Wilson.

NEW ZEALAND

ANOS New Zealand, 20 Fairlands Ave., Waterview, Auckland, New Zealand.

ANOG, 51A Glenharrow Ave., Christchurch, New Zealand. ☎(03) 342-7474.

New Zealand Native Orchid Group, 22 Orchard St., Wadestown, Wellington, New Zealand.



grower, D.I. Smedley

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Dendrobium tetragonum x _Dockrillia fuliginosa_

A new "intergeneric" hybrid made by Darryl Smedley of Oceania Orchids, NSW.

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